DOCUMENT RESUME

ED 195 537 SP 017 158

AUTHOR Brandt, Ronald S.; Modrak, Nancy Carter
TITLE Measuring and Attaining the Goals of Education.
INSTITUTION Association for Supervision and Curriculum Development, Alexandria, Va.
REPORT NO ISBN-0-87120-102-X
PUB DATE 80
NOTE 114p.
AVAILABLE FROM Association for Supervision and Curriculum Development, 225 North Washington St., Alexandria, VA 22314 (Stock Number 611-80210, $5.75, Prepayment Requested).

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Academic Aspiration; Basic Skills; Career Choice; Citizenship Responsibility; Concept Formation; Creativity; *Educational Objectives; Educational Research; Elementary Secondary Education; *Humanistic Education; *Informal Assessment; Interpersonal Competence; Lifelong Learning; Measurement Techniques; *Outcomes of Education; Physical Health; Self Actualization

ABSTRACT

Ten broad goals of education that encompass cognitive, affective, and psychomotor behaviors are: (1) competency in basic skills; (2) ability to objectively see oneself; (3) understanding others; (4) using accumulated knowledge to interpret the world; (5) continuous learning; (6) mental and physical well being; (7) participation in the economic world of production and consumption; (8) responsible societal membership; (9) creativity; and (10) coping with change. A set of research questions and hypotheses on goal and subgoal interrelationships were developed and are concerned with the extent to which the achievement of one goal facilitates or interferes with the achievement of other goals, and the relationship of the content and processes within the learning environment to the achievement of multiple goals of education. A review of available measurement instruments, both published and unpublished, is presented along with information about their appropriateness for use in determining student achievement of the specified educational goals. A research model for use in determining student achievement of the goals of education identifies several types of educational variables which may affect outcomes and offers some sample sets of research hypotheses. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Measuring and Attaining the Goals of Education

ED195537

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

R. Leeper

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

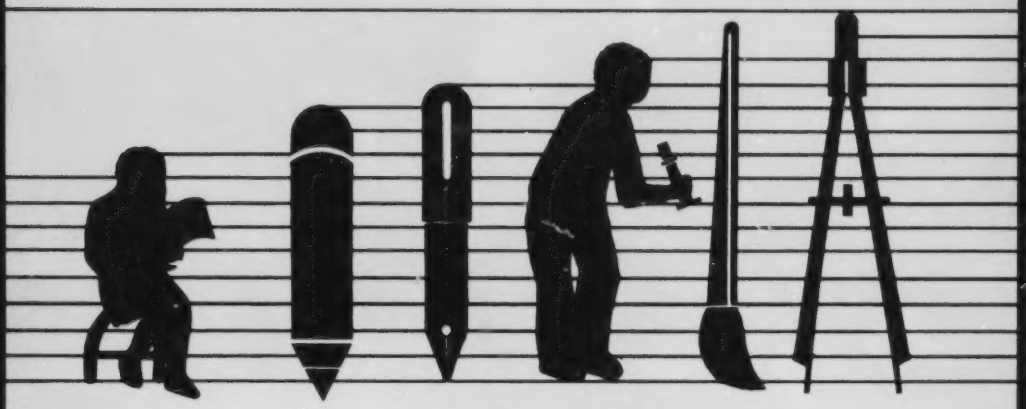
U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

SP 017 158

2

Measuring and Attaining the Goals of Education



The ASCD Committee on
Research and Theory

Wilbur B. Brookover, *Chairman*
Joseph Ferderbar
Geneva Gay
Mildred Middleton
George Posner
Flora Roebuck

Association for
Supervision and
Curriculum
Development

225 North Washington Street
Alexandria, Virginia 22314

Editing:
Ronald S. Brandt, ASCD Executive Editor
Nancy Carter Modrak, Assistant Editor

Copyright © 1980 by the Association for Supervision and Curriculum Development. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

The materials printed herein are the expressions of the writers and not necessarily a statement of policy of the Association.

Stock number: 611-80210
Library of Congress Catalog Card Number: 80-68809
ISBN: 0-87120-102-X

Contents

Foreword iv

Preface v

1. Introduction 1

2. Goals of Education 4

3. Measuring Goal Attainment 16

4. A Model for Research on Goal Achievement 48

5. Getting There 101

References 104

About the Authors 105

Foreword

With the current overemphasis on test results, what gets tested often helps determine what gets taught. Unfortunately, most educational measurement concentrates on a narrow band of facts and skills that get measured because they are measurable.

This is not to suggest that these facts and skills are unimportant; on the contrary, reading and computation, for example, are widely recognized as basics. However, there are other aims just as basic—writing, of instance —that are not included in standardized testing programs.

Because a comprehensive testing program may help maintain a balanced curriculum, and because curriculum workers need to know what progress students are making on *all* the goals of education, ASCD asked a group of qualified educators to prepare this report. Beginning with identification and analysis of widely accepted goals of education, they prepared a catalog of instruments currently available for measuring each goal.

Then they went further. Proceeding on the assumption that there is little point in measuring goals if educators can only guess about how to attain them, they devised a model for research on goal attainment.

The research model presented in this book, if used as intended, can contribute substantially to our knowledge about the complex relationships among the goals of schooling, specific outcomes representing those goals, processes of teaching and learning employed by schools, and environmental factors influencing those processes. That will be no small contribution.

BARBARA DAY
President, 1980-81
Association for Supervision and Curriculum Development

Preface

During the 1970's, citizens and school administrators demanded accountability for student achievement. Teachers throughout the nation were asked to write educational goals which would encompass cognitive, affective, and psychomotor behaviors. Hundreds of goal statements resulted from these demands. However, as school personnel transformed instructional programs to meet the goals and objectives, many questions became apparent. Which goals are really important? Is there a difference between an objective and a goal? How can goal attainment be measured? Are cognitive goals and humanistic concerns incompatible?

These issues led ASCD to create a committee to examine such concerns and suggest ways of responding to them. The Committee, identified as the Working Group on Theory and Research, began work in the summer of 1976. During the three years in which the Committee functioned, it undertook the following tasks:

1. Clarified the purpose of the committee
2. Developed ways of working as a group
3. Collected and examined goal statements from various sources
4. Developed some conceptual parameters on the definition of educational goals and subgoals
5. Wrote a set of goals and subgoals
6. Examined the goals for interrelationships
7. Searched for instruments to measure goals and subgoal attainment
8. Formulated questions and hypotheses concerning the relation of school programs to goal attainment
9. Developed a research model for examining the relation of school to the attainment of educational goals
10. Developed a series of research designs to suggest the kinds of research needed to determine the effectiveness of school programs in achieving educational goals

This publication is intended to give the reader a perception of educational goals and their relationship to cognitive, affective, and psychomotor learning. It identifies and describes the interrelationships of ten major educational goals, suggests ways of measuring goal achievement, and

identifies some instruments that measure subgoals. Also provided is a review of the available published and nonpublished instruments for measuring goal attainment.

A comprehensive model for research is included with samples of research designs that suggest hypotheses concerning the relation of selected teaching-learning processes to out-of-school and school variables on one hand and to the attainment of immediate outcomes and desired educational goals on the other. We trust that this publication will assist in improving the efforts of educational systems to attain valued learning outcomes or goals.

The members of the Committee thank all those who assisted in the preparation of this publication:

Kenneth Haskins served briefly as a member of the Committee and assisted in the definition of its task.

Elizabeth Shook and Pricilla Durkin assisted in the examination of goal interrelationships.

Jean King assisted in the search for instruments to measure goal attainment and contributed significantly to the compilation and writing of the instrument review section of this publication.

Hilda Lauber and Deanna Lusk also assisted in the search and review of assessment instruments.

Mauritz Johnson, John W. McFarland, David Aspy, Carl Guerriero and J. Robert Coldiron reacted to and made suggestions concerning the set of goals and subgoals.

The ASCD staff has assisted the Committee throughout its work. Geneva Gay, who first served as staff associate, was later appointed to the Committee. Ruth Long succeeded Ms. Gay as staff associate. Virginia Berthy has managed the meeting arrangements throughout with great efficiency.

The Committee on Research and Theory thanks all of the above, and others who are not mentioned, for their contributions to this task. With some pride in accomplishment, we wish to emphasize that this monograph is a Committee product. No single person should be assigned any responsibility for our mistakes or failures; these must be borne by the Committee alone. Although various sections were first written by individual Committee members, they have all been thoroughly reviewed and often rewritten by the Committee. In view of the disparate backgrounds and orientation to the subject of our endeavor, it is rather remarkable that all Committee members concur in what we have written. Each member has pursued his or her points vigorously and has educated the others while being educated by them. We thank ASCD for the opportunity to learn from one another and we jointly contribute this report of our deliberations.

Chapter 1 Introduction

Since its creation in 1943, the Association for Supervision and Curriculum Development has had an abiding interest in humanistic education. In fact, humanistic education has been a long-standing value commitment of the Association. Not only has ASCD been sympathetic to making education more humane within its own programmatic jurisdiction, it also has been a national leader in this endeavor.

Humanistic education and its advocates have not escaped the skeptical eye of contemporary education critics. Often, the challenge has been made to exponents of humanistic education to clarify the meaning of the concept in terms of pragmatic actions that are useful in everyday school programs. What are the fundamental objectives of humanistic education? How are these to be evaluated? What parts of the school curriculum should be primarily concerned with humanistic education? How does the presence or absence of humane orientation in the school environment affect student performance in the mastery of basic skills, in the terminology of knowledge, and in the development of other intellectual abilities? The list of questions is endless as school practitioners try to make humanistic education meaningful to their functional worlds.

Frequently, humanistic education sympathizers, lacking empirical data to support their ideological and speculative contentions, have been unable to answer these questions to the satisfaction of school practitioners and taxpayers. While many educators may agree with the ideals of humanistic education, this agreement has not weakened their need and demands for ideals to be translated into pragmatic possibilities. Instead, these demands are on the increase. Current concerns for accountability, minimum competency testing, and demonstrated performance of educational programs and priorities, in terms of quantifiable data and cost-effective analyses, are causing even more questions to be raised about the practicality and efficiency of humanistic education.

Nor has ASCD, in trying to live up to its commitment to humaneness in education, remained untouched by the prevailing climate of the national educational community. The frequency with which schools are depending upon one-dimensional cognitive measures as the only devices for assessing student performance has become particularly bothersome to

the Association. Such techniques tend to de-emphasize, or ignore entirely, the affective and psychomotor aspects of learning. The fundamental components of humanistic education include cognitive, affective, and psychomotor characteristics. ASCD feels a professional responsibility to caution educators about the distortions caused by single-focused evaluations of student achievement, and to provide some leadership in determining how more comprehensive assessments of student performance in schools might be acquired.

The Committee on Research and Theory was created in June 1976 by the Executive Council of ASCD to (1) "Identify valued learning outcomes which reflect the 'holistic' nature of individuals in terms of the integration of cognitive, affective, and active (that is, to transfer to real life behaviors) dimensions," and (2) "Develop a research design which would have as its major goal the measurement of as many as possible of the valued learning outcomes as identified. . . ."* It was also encouraged to develop an "ambitious" research plan that would "have significant educational implications." Six educators from diverse backgrounds, along with an ASCD staff liaison person, were invited to become members of the Committee. They included Wilbur Brookover (Chairman of the Committee), Professor of Urban and Metropolitan Studies, Michigan State University; Joseph Ferderbar, Superintendent of the Neshaminy School District, Langhorne, Pennsylvania; Geneva Gay, Associate Professor of Education, Purdue University; Ruth Long, Associate Director for Program Development of ASCD; Mildred Middleton, Curriculum Coordinator, Cedar Rapids Community Schools; George Posner, Associate Professor of Education, Cornell University; and Flora Roebuck, Associate Professor of Education, Texas Women's University.

The Committee on Research and Theory began the task by clarifying the charge assigned to it. We recalled the basic tenets of humanistic education, reviewed ASCD's historical association with humanistic education, speculated why most evaluations of student achievement tend to concentrate on mastery of cognitive information in basic skills and subject matter, and observed how an only cognitive-based assessment of student performance approach falls short of the concept of humanistic education.

The Committee asked representatives of the ASCD Executive Council to share their perceptions and interpretations of the mission given to it. After much deliberation, we concluded that the Executive Council, operating on the premise that humanistic education is concerned with *all* aspects of learning and developing the "whole" child, had, in effect, directed us to examine (1) how the valued goals (cognitive, affective learning outcomes

* This statement is from the ASCD Executive Council minutes of June 1976.

and the active dimension of education) were interrelated; (2) the types of school programs and/or experiences that are likely to maximize achievement in all goals; and (3) how educators might design research and evaluation programs to acquire comprehensive measures of student achievement in cognitive, affective, and psychomotor learning.

To accomplish our task, we undertook several activities. The Committee developed a list of goals and subgoals that we believe comprise the kinds of behaviors a well-educated person would exhibit. We developed a set of research questions and hypotheses on goal and subgoal interrelationships. These hypotheses and questions are concerned with the extent to which the achievement of one goal facilitates or interferes with the achievement of other goals, and the relationship of the content and processes within the learning environment to the achievement of multiple goals of education. We have completed an extensive review of available measurement instruments, both published and unpublished, and have made some assessments about their appropriateness for use in determining student achievement of the educational goals specified in this report. Finally, we have developed a research model for use in determining student achievement of the goals of education. The model is used to illustrate the kinds of content and processes within learning environments that are most likely to produce desired multiple goals of education. Each of these activities is discussed in detail in the following chapters.

Chapter 2

Goals of Education

Procedure for Identifying Goals

What intellectual, social, and personal behaviors are desirable for individuals who have successfully matriculated through the K-12 educational process? What are the "valued learning outcomes" (goals and subgoals) that have a "humanistic character"? Are there some goals of education that school systems desire to achieve that are inherently contradictory to the principles of humanistic education? How does one determine what is humanistic and what is not humanistic in specifying goals of education? Must any list of goals of education, of necessity, be comprehensive and interrelated to qualify as humanistic? These questions provided the motivational stimuli and orientational direction for us as we began the task of "identifying valued learning outcomes which reflect the 'holistic' nature of individuals in terms of the integration of cognitive, affective, and active dimensions."

The first steps in the development of a set of desired goals of education involved collecting data on existing goal statements and establishing some conceptual parameters on the definition of an educational goal. The data collection process began with a review of the fundamental principles of humanistic education and some preliminary speculations about the kinds of goal statements inherent in these principles. Secondly, we decided to find out from other individuals and organizations involved in the development of educational goal statements what they had discovered about goal interrelationships. The idea behind this strategy was to avoid reinventing the wheel; it seemed expedient and sensible to identify the best existing sets of "wheels" and endorse those goals as exemplary statements of desired learning outcomes.

Many different lists of goals were readily available since the accountability, minimum competency testing, and back-to-basics trends were already well under way by the time the Committee on Research and Theory began work on its task. The specification of goal statements has been a priority in these trends. Letters of inquiry were sent to more than a hundred organizations and individuals, including regional research and development centers, testing agencies, and state departments of education, requesting information on their formulations of goals, objectives, learning outcomes,

and ways of measuring them. Educational research and development centers were included in the surveys to discover what recent or ongoing research they were undertaking relevant to the relationship between humanistic programs and goals of education. The surveys revealed little ongoing research in humanistic education per se. We also found that no comprehensive knowledge was available on the interrelationship of education goals or on programs that most effectively achieve multiple goals.

Lists of goal statements were collected from such educational agencies as the Educational Testing Service, the North Dakota Study Group on Evaluation, Phi Delta Kappa, National Assessment of Educational Progress, the Learning Research and Development Center, NIE Clearinghouse on Teacher Education, and Research for Better Schools. Among the state departments of education who shared their goals (or "aims," "purposes," "objectives") with us were Michigan, Utah, New Jersey, Texas, Oregon, Pennsylvania, and Florida. A review of their different goals revealed a certain degree of similarity among them: (1) some goal statements appeared, in one form or another, on all lists, (2) the goals aimed to be comprehensive in both breadth of coverage and intellectual demands, and (3) many of the notions we typically associate with humanistic education were included in the goal statements. These inspections also led to two other conclusions: (1) while many of the organizations surveyed had formulated *multiple-dimensional goals,* none of these *integrated* cognitive, affective and psychomotor dimensions of learning; and (2) most of the examined lists of goals were "political statements" that, in their current forms, were extremely difficult to measure. Impressed by Pennsylvania's list of educational goals, and the processes the state was using to continually refine the goals and update its evaluation techniques of student achievement, we decided to use the Pennsylvania list as the primary basis from which to derive our own list of goals.

Definition of Goals

From the outset of the search for goal statements, Committee members were beset by a problem of terminology and some confusion over conceptual parameters. These dilemmas continued to plague us throughout our survey of goal statements. We found that we had to resolve them before we could proceed further with delineating our list of "valued learning outcomes." The major questions seemed to be: What is the distinction between learning outcomes as aims, goals, and objectives? Which of these should be the focus of our attention? Some stipulated definitions and a decision as to our focus were clearly needed. Following the distinctions made by Johnson (1967, 1977) and Zais (1976), we differentiated between

teaching-learning events, immediate learning outcomes, objectives, goals, and frame factors, and decided to focus our primary attention on specifying educational goals.

The Committee began the definitional task by describing *teaching-learning events* as occurring when teachers engage in interactions with students for the purpose of producing some learning. That is, they are engaged in the teaching process while the students are engaged in the learning process. These events are expected to lead to particular *learning outcomes,* such as the student believing or knowing that something is the case or knowing how to do something. These learning outcomes may or may not have been intended. If they were intended, they are typically termed *learning objectives* or intended learning outcomes. If they were not intended, they may be termed side effects, or unintended learning outcomes.

Students learn many things, both in school (intended and unintended) and out of school (their "unofficial" education). As students mature, some of the diverse learnings become internalized and integrated so that students, while profoundly affected by some of the things they have learned, may lose the ability to identify the particular learnings that have affected them. We termed changes in students resulting from a combination of maturation and an integration of facts and ideas learned in and out of school an *educational result.* For example, as a result of learning a variety of things both in and out of school, students become more tolerant of people who are different, more law abiding, and more capable of coping with change. As with learning outcomes, some of these changes may have been intended and some unintended. Intended changes of this sort we termed *educational goals.*

Educational goals are the changes in students toward which we want learning outcomes to lead. These goals describe attributes or characteristics of the well-educated person, rather than the specific skills that constitute an education. They represent the cumulative effect or result of many learnings. Educational goals are the intended educational results, just as learning objectives are the intended learning outcomes.

In a sense, educational goals *justify* learning objectives. That is, if one asks *why* a particular learning objective has been included, the answer, in part, must be in terms of the changes in the students toward which that learning is supposed to lead. Likewise, learning objectives help to *actualize* educational goals. In other words, if one asks *how* a particular goal is to be accomplished, the answer is, in part, in terms of the kinds of things students will learn. Figure 1 describes this relationship.

Similarly, learning objectives justify teaching-learning events, while teaching-learning events serve to actualize learning objectives. If one asks *why* particular classroom events were made to happen, the answer, in part,

Figure 1. The Relationship Between Educational Goals and Learning Objectives

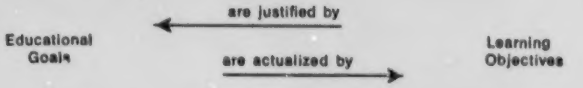


Figure 2. The Relationship Between Learning Objectives and Teaching-Learning Events

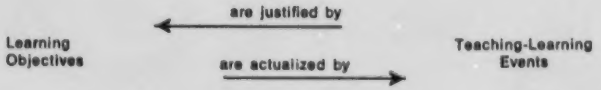
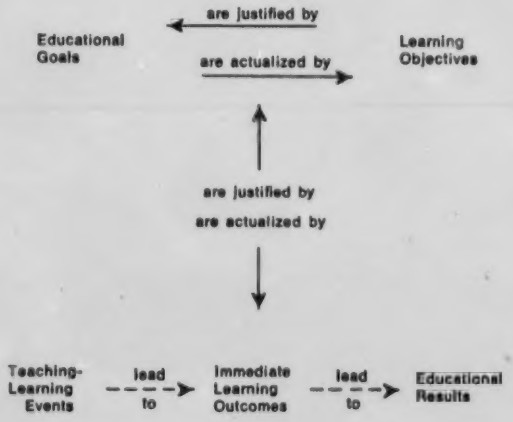


Figure 3. The Logic of the Educational Process



is because they are likely to lead to the accomplishment of particular learning objectives. If one asks *how* particular learning objectives will be actualized, the answer will ultimately be in terms of the teaching-learning events. Figure 2 summarizes this relationship.

If we include in a diagram not only educational goals but also educational results, and not only learning objectives but immediate learning outcomes as well, we have the Figure 3 relationship describing the logic of the educational process.

The broken lines at the bottom of Figure 3 signify that the element on the left leads to or influences the element to its right. The broken line does not signify a deterministic production process, since many factors other than school events affect what students learn, and many factors other than learning affect what students become.

The logic of the educational process takes place within a set of interactive "frame factors" (Johnson, 1977)—conditions that have a potential influence on the educational process. Frame factors include the school and classroom environment (grouping practices), school input factors (personnel preparation), and community input factors (socio-economic status of students). They are also of an economic nature (per-pupil expenditure or the school district's budget), temporal nature (scheduling, length of the school year, grade structure), spatial nature (the school's architectural structure), and organizational or personnel nature (school size, departmentalization, attendance requirements, decision-making structures, characteristics of teachers and students, and patterns of student-teacher interactions). They vary in the directness of their effect upon the teaching-learning process and may even appear at times to have no effect at all upon that process. All these conditions have the potential to serve both as constraints or limitations and as resources for teaching-learning events. For instance, the heterogeneity of the cultural backgrounds of students places serious constraints on uniform-paced group instruction. At the same time, the diversity of cultures is a rich resource for cultural learning.

The Committee on Research and Theory faced still another problem when we tried to specify some educational goals. This was one of vagueness and ambiguity in the statements of "valued learning outcomes." This dilemma was to be expected. Statements typical of educational goals include such concepts as good citizenship and positive self-concepts. We were sensitive to the tendency to be either excessively obscure in our goal statements, or to change them into statements of learning objectives or indicators of goal accomplishment. We resolved this problem by attempting to justify, as clearly as possible, what we meant by each major educational goal. These specifications we term *subgoals;* a set of subgoals is included for each of the major goals.

Description of Goals and Subgoals

Having stipulated our definitions and determined our focus, we turned once again to our data pool of goal statements. Using the Pennsylvania goals as a starting point, the Committee on Research and Theory set about accumulating, tabulating, assessing, integrating, elaborating, and creating. The result was a list of ten goals, each of which has several subgoals. These goal statements underwent several revisions, based on periodic reviews by members of the Committee as we progressed into new domains of exploration in trying to address the task, and on the opinions of selected individuals who were not directly associated with the study group. The following is our final set of goal statements, describing the kinds of behaviors a well-educated person would exhibit. We believe this list is comprehensive enough to encompass most of the goals the Committee studied.

Goal One: Basic Skills

Subgoals

1. Acquires information and meaning through observing, listening, and reading
2. Processes the acquired information and meaning through skills of reflective thinking
3. Shares information and expresses meaning through speaking, writing, and nonverbal means
4. Acquires information and meaning through the use of mathematical symbols
5. Manipulates symbols and uses mathematical reasoning
6. Shares information and expresses meaning through the use of mathematical symbols

Goal Two: Self-Conceptualization

Subgoals

1. Recognizes that self-concept is acquired in interaction with other people
2. Distinguishes between significant and nonsignificant others and their self-evaluations
3. Takes into account significant others and disregards nonsignificant others in the self-conceptualizing process
4. Distinguishes among many concepts of self in various roles or social situations

5. Assesses own functioning in each of several different situations
6. Perceives accurately, assesses validly, and responds appropriately to others' evaluations in the context of each specific role situation rather than to generalize to all situations

Goal Three: Understanding Others

Subgoals

1. Bases actions and decisions on the knowledge that individuals differ and are similar in many ways
2. Bases actions and decisions on the knowledge that values and behaviors are learned and differ from one social group to another
3. Bases actions and decisions on the understanding of lifestyles or behaviors within the context of the value system of the societies in which they were learned
4. Acts on the belief that each individual has value as a human being and should be respected as a worthwhile person in his or her own right
5. Bases actions and decisions on the understanding that as individuals move from one society to another, they can learn new lifestyles and can learn to behave appropriately in different societal contexts
6. Acts on the belief that human behavior is influenced by many factors and is best understood in terms of the relevant personal context in which it occurred
7. Seeks interactions and feels comfortable with others who are different in race, religion, social level, or personal attributes as well as those who are similar in these characteristics
8. Withholds judgment of another's actions until after trying to understand the personal and social context of that action

Goal Four: Using Accumulated Knowledge to Interpret the World

Subgoals

1. Applies basic principles and concepts of the sciences, arts, and humanities to interpret personal experiences
2. Applies basic principles and concepts of the sciences, arts, and humanities to analyze and act upon public issues
3. Applies basic principles and concepts of the sciences, arts, and humanities to understand natural phenomena
4. Applies basic principles and concepts of the sciences, arts, and humanities to evaluate technological progress

5. Applies basic principles and concepts of the sciences, arts, and humanities to appreciate aesthetic events

Goal Five: Continuous Learning

Subgoals

1. Seeks and values learning experiences
2. Acts as a self-reliant learner, capable of autonomous learning
3. Bases actions and decisions on the knowledge that it is necessary to continue to learn throughout life because of the inevitability of change

Goal Six: Mental and Physical Well-Being

Subgoals

1. Practices appropriate personal hygiene
2. Consumes a nutritionally balanced, wholesome diet
3. Exercises sufficiently to maintain personal health
4. Avoids, to the extent possible, consuming materials harmful to health, particularly addictive ones
5. Performs daily activities in a manner to prevent injury to self and others
6. Adapts to environmental constraints while seeking to change destructive elements in the environment
7. Maintains personal integration while functioning flexibly in varied situations
8. Behaves rationally based upon reasonable perceptions of self and society
9. Perceives self positively with a generally competent sense of well-being
10. Participates in satisfying leisure-time activities

Goal Seven: Participation in the Economic World of Production and Consumption

Subgoals

1. Bases decisions on an awareness and knowledge of career options
2. Interacts with others on the basis of an understanding and valuing of the characteristics and functions of different occupations
3. Selects and pursues career opportunities consonant with social and personal needs and capabilities
4. Makes informed consumer decisions based on appropriate knowledge of products, needs, and resources

Goal Eight: Responsible Societal Membership

1. Acts consonant with an understanding of the basic interdependence of the biological and physical resources of the environment
2. Acts consonant with an understanding of the interrelationships among complex organizations and agencies in modern society
3. Acts in accordance with a basic ethical framework incorporating those values contributing to group living, such as honesty, fairness compassion, and integrity
4. Assumes responsibility for own acts
5. Works in groups to achieve mutual goals
6. Invokes law and authority to protect the rights of all persons
7. Exercises duties of citizenship, such as voting
8. Bases actions and decisions on a sense of political efficacy
9. Exercises the right of dissent in accordance with personal conscience and human justice
10. Assumes responsibility for dependent persons of all ages in a manner consistent with both their growth and development needs, and the needs of society

Goal Nine: Creativity

Subgoals

1. Generates a range of imaginative alternatives to stimuli
2. Entertains and values the imaginative alternatives of others

Goal Ten: Coping with Change

Subgoals

1. Works for goals based on realistic personal performance standards
2. Decides when a risk is worth taking
3. Works now for goals to be realized in the future
4. Entertains new perceptions of the world
5. Tolerates ambiguity
6. Bases actions and decisions on an understanding that change is a natural process in society and one which increases exponentially
7. Bases actions on an understanding that coping with change is a continuous process throughout life
8. Acts with an appreciation that in a changing world, flexibility and adaptability are strengths rather than weaknesses
9. Selects viable alternatives for actions in changing circumstances

These goals do not represent what the Committee believes should be the goals of any particular school system, but any school system should find this listing comprehensive and clear enough to use as a basis for selecting goals suitable for its own particular situation and for assigning the appropriate priority to each goal selected.

The reader should also note that these educational goals are assumed to be appropriate for both elementary and secondary education. However, it should be understood that, depending on the level of schooling, the goals shift in their priority. For example, Goal Seven is more typically stressed in the 11th and 12th grades than in earlier grades and subgoal one of Goal Six is typically given greater emphasis in grades 1-3 than in later grades.

We should also point out again that an educational goal (as we have defined the term) does not describe the content of instruction, but instead, the educational result toward which the learning of the content is intended to lead. Thus, even though historical facts, scientific principles, and interpretations of English literature are not explicitly mentioned in any of the goal statements, all of the goals nevertheless justify the teaching of these content areas. The goals specify what kind of person the student should be as a result of learning the content and not what content they should learn.

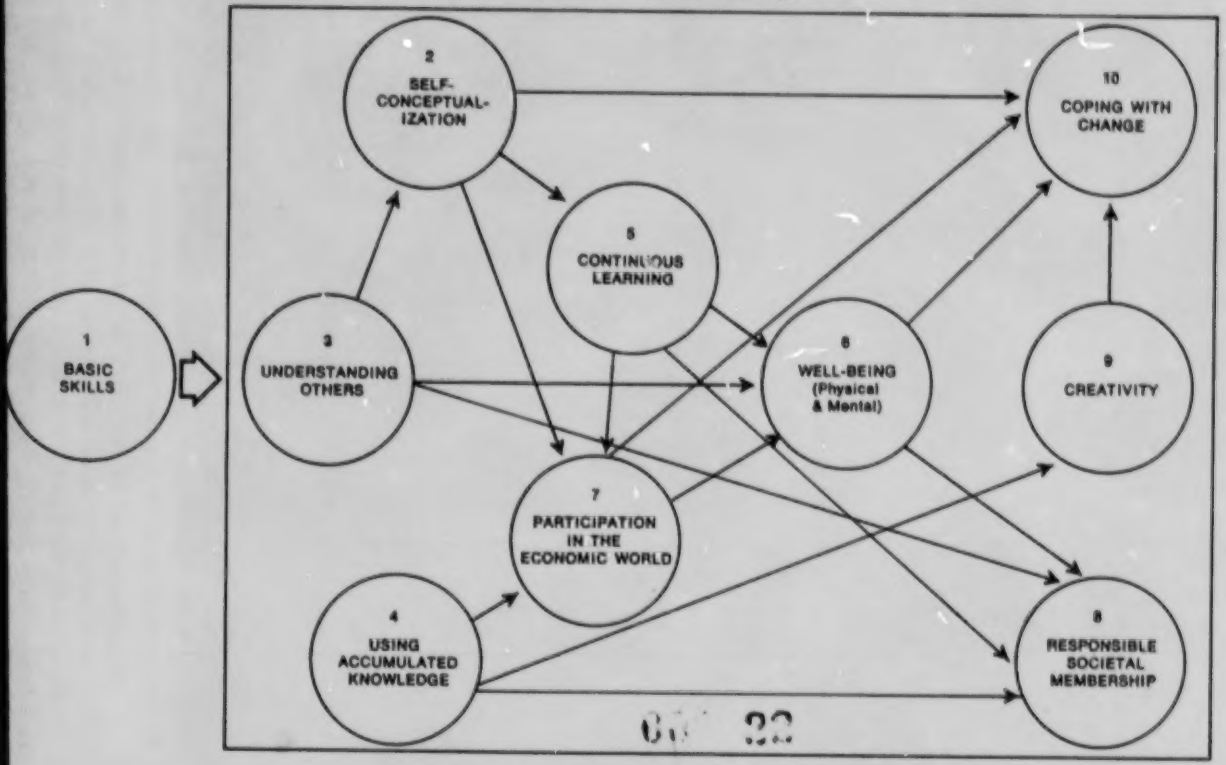
The Interrelationship of Goals

In order to ensure that our list of goals was an integrated set that was, in fact, a reflection of the "holistic" nature of the individual, the Committee analyzed the relationships among the ten goals. A matrix of the relationships among all the goals and subgoals was charted. Each goal was analyzed in terms of its relationship to the other goals to determine whether or not its attainment was (1) a prerequisite to the attainment of other goals, (2) an indicator that other goals had already been attained, (3) a facilitator of the attainment of other goals, or (4) an interference with the attainment of other goals.

The resulting matrix was then analyzed by the members of the Committee for directionality of relationships and interdependence among the ten goals. From this analysis a picture of the directionality of dependence within the set of ten goals was derived. Figure 4 depicts these relationships.

The goals seem to fall into four interdependent clusters. Goal One, which encompasses the basic skills, stands alone as a prerequisite for the attainment of all other goals. The next cluster includes Goals Two, Three, and Four, which involve basic understandings of self, others, and the world. The third cluster of Goals Five, Six, and Seven comprises day-to-

Figure 4. Diagram of Goal Relationships



day living skills. Cluster four, including Goals Eight, Nine, and Ten, have to do with the quality of life of both the individual and society.

A further examination of the goal relationships led to several conclusions from which research hypotheses might be derived:

- A complementary and interactive relationship does exist among the goals and subgoals.
- The achievement of some goals is essential to or facilitates the attainment of other goals.
- Time limitations may dictate the relative emphasis, or lack thereof, on one or more goals at a particular educational level, and thereby restrict respective attainment.
- Basic skills, as defined in Goal One, are prerequisite to all other goals.
- The removal of any goal affects the achievement of other goals.
- The achievement of any one goal does not interfere with the achievement of any other goal.
- The goals concerned with understanding others, self, and the world, facilitate the achievement of subsequent goals.
- All of the goals are characteristic of humane people in a humane society.

In order to ensure that these relationships were natural, the goals were broken apart into subgoals, and the relationships recharted. We discovered that the relationships were not significantly changed when recharted by subgoals rather than by major goals. This discovery led us to conclude that the set of goals is, in fact, integrated and reflective of the holistic nature of the individual.

Two other statements seem appropriate regarding the interpretation of the goal relationships presented in Figure 4. First, Goal One is tied to the other goals in the fashion indicated in the diagram *only* when basic skills are defined as they are in the subgoals of Goal One. That is, only when basic skills are defined as a broad set of functional skills, *not* items of content and *not just* the 3 R's, do they carry a strong prerequisite relationship for the attainment of *all* the other goals. Second, all relationships among the goals are seen as spiral. The prerequisite relationship used for the analysis was *not* one of mastery. Thus, a prerequisite relationship between any two goals does not assume that complete mastery of the prerequisite goal is necessary before the other goal can be activated. Rather, attainment of some aspect of the prerequisite goal makes it possible to begin attainment of other goals; these attainments in turn feed back into previous goals, thus facilitating further learning in a spiraling fashion.

Chapter 3 Measuring Goal Attainment

Following the identification of the complex goals of education and their interrelationships, the Committee examined the extent to which instruments were available to measure the specified educational goals and subgoals.

Clearly, measuring the achievement of certain goals and subgoals presents difficulties. First, many goals contain terms such as "self-conceptualization," "creativity," and "basic principles and concepts of the sciences, arts and humanities"—terms which are commonly used in education and may have commonly recognized meaning, but which must now be used for measurement purposes. Published tests do not necessarily seek to measure the same concept as the goal names, nor do they necessarily seek to measure the same concepts identified in the subgoals. Any test selected to measure concepts will be valid only to the extent that the measured concepts are similar.

Second, the goals, worded in behavioral terms, are often unsuited to measurement by paper and pencil tests; in many cases, instrumental or informal observation of student behavior may be the only valid way of determining the extent to which the goal has been achieved. Unfortunately there seems to be no coherent body of observational instruments that addresses the problem of attainment of goals; that is, assessment of criterion behaviors. Rather, most of the readily available instruments, such as those anthologized in *Mirrors of Behavior* (Simon and Boyer, 1974), are primarily concerned with the process of teaching/learning rather than the outcomes of that process. Thus, there exist instruments such as the *Aspy Process Scales* which, among other things, adequately and reliably measure the teacher's communication of empathy, or Carkhuff's *Detractor-Leader Scale* which measures the degree to which a student contributes to the ongoing learning process. However, no instrument measures, for example, the degree to which a student works for goals based on realistic personal performance standards. Observational instruments designed to measure criterion or outcome behaviors should be as feasible as measures of process variables; in fact, many of the already available and excellent observation instruments could be adapted or extended to measure student learning outcomes as well as teaching-learning processes as criteria. This probably

needs to be the next focus of a concerted thrust in measurement methodology.

But, even if observation were feasible, it could prove problematic for those goals where the behaviors identified may be expressed differently in different situations (for example, Self-Conceptualization or Coping with Change). That is, if the self in fact is differently conceptualized in relationship to different reference groups, then measuring it adequately means assessing it in several settings, not just in one classroom. Similarly, measurement of Coping with Change would seem to require assessment of attitudes or behaviors both prior and subsequent to involvement in a change process.

A third measurement problem stems from the long-term nature of certain goals. Must schools wait until a student is 18, for example, to measure subgoal 8.7, "Exercises duties of citizenship," or subgoal 7.3, "Selects and pursues career opportunities consonant with social and personal needs and capabilities"? If not, how shall these be measured? What is needed seems to be instruments which can assess, within the school setting, those behaviors of young people which are reliable predictors of future behavior in an adult context. Needless to say, such instruments are difficult to find.

With these constraints in mind, the Committee began its search for available measurement instruments.

The Search Procedure for Published Instruments

During the first stage of the search procedure, the Committee on Research and Theory used descriptions from two sources: *Measuring Human Behavior* (Lake and others, 1973) and *Fifth, Sixth, and Seventh Mental Measurement Yearbooks* (Buros, 1965) to select the names of published (or commercially available) tests which seemed appropriate for measuring each subgoal. Nonpublished tests (research instruments and others not available from regular publishing sources) were screened through examination of titles and subject classifications in three sources: *Tests and Measurements in Child Development: A Handbook* (Johnson and Bommarito, 1971), *Mirrors for Behavior, III* (Simon and Boyer, 1974), and *Tests in Microfiche* (Educational Testing Service, 1975-1978).

During the second stage, these tests were screened using the following criteria:

(1) Were they aimed at *school-age* subjects (K-12)?

(2) Were they designed for and (if normed) normed to a *normal American* audience (that is, not mentally retarded)?

(3) Were they in-print, published, paper-and-pencil tests *feasible* to administer, score, and interpret in a school setting by *non-clinicians?* (In the case of nonpublished tests, the criteria "in print, published" was interpreted to mean that the text of the test had been reported in the professional literature, in format, and was complete with directions for administration, scoring, and interpretation.)

(4) Were they relatively *recent* (1960-present)?

(5) Were they not based on the concepts of a *specific theorist* (that is, requiring interpretation only from a specific theorist's conceptual perspective)?

(6) Did they report *reliability* coefficient of at least .60 or better?

(7) Did they report high content *validity* and/or at least moderate construct validity?

(8) If published, were they *favorably reviewed* in a *Mental Measurement Yearbook?*

In the final stage, the actual tests and manuals selected in the second stage were examined for the match between what the test measured and what the goal meant. Tests meeting all of the criteria are listed below. The obvious disadvantage of such a search procedure is that some good tests may have been missed in the first stage or rejected in the second or third.

No tests of basic skills were examined by the Committee since many suitable tests are readily available in the form of achievement batteries and are widely used by school districts. The purpose of the Committee's efforts was to identify instruments for potential use as measures of goals currently not being measured by schools.

Review of Available Instruments

This review uses the same format for each of the goals (excluding Goal One, Basic Skills): first, comments on the measurement problems inherent in the goals themselves as related to available tests; second, brief descriptions of the appropriate located tests; and finally, a summary table of information about these tests, including sample items. Two features and one omission on the table require explanation:

1. *Cost.* Rather than give exact figures which may change in these inflationary days, a relative cost estimate—high, moderate, or low—is given. Unless otherwise noted, costs for tests with the Educational Testing Service (ETS) as the source are assumed to be minimal since the ETS microfiche sets are prefaced by the statement, "The materials reproduced

in microfiche may be reproduced by the purchaser for his own use until otherwise notified by ETS or the author." Cost estimates are based on hand-scoring but the availability of machine-scoring is indicated by "m" after the cost estimate in the table.

2. *Subgoals measured.* Unless a subgoal has been footnoted, the test measures the subgoal directly. Footnoted subgoals are either indirectly or only partially measured. The notation "goal number .0" is used for those tests which measure the goal as a whole, rather than individual subgoals.

3. *Reliability and validity data* are omitted from the tables for two reasons: (1) this information has already been used in the selection procedure, and (2) it varied so widely in both type and number that its inclusion would have required a complex and unwieldy encoding procedure that might have produced more confusion than information.

Goal Two: Self-Conceptualization

1. *Comments*

The measurement of Goal Two presents two more problems in defining terms. One difficulty in assessing this goal arises because it focuses on the process of self-conceptualization, rather than on self-concept as a presumably stable characteristic. Each of the subgoals involves an aspect of the process of self-conceptualizing in interaction with other people. Given this focus on the interactive nature of the self-conceptualizing process, most tests currently available are inappropriate. They generally measure aspects of self-concepts that are presumed to be stable human characteristics rather than continuing processes of self-assessment in varying social situations. Although some parts of the tests cited may be relevant in assessing specific subgoals, the test results require careful interpretation if they are to be used for evaluation. The relation of the test results to the subgoals needs careful consideration before conclusions can be drawn.

No instruments specifically designed to measure the self-conceptualization process identified in the subgoals were found, but some of the numerous inventories and scales designed to evaluate various aspects of personal and/or social adjustment and the current state of global or specific self-concepts may vary from one social context to another and from one social role to another. A person's concept of self in the student role may be quite different from his or her self-concept as an athlete. Both may vary with the group relevant to the person at a given time. Observation in various social settings may be useful in assessing students' self-conceptualizing, but this is frequently difficult and subject to the validity problems associated with highly inferential measures.

With these precautions, a few of the instruments available for use with students are cited. Sample items for each test in each goal appear in Tables Ia. through Ig. beginning on page 29.

2. *Appropriate Instruments*

a. The Adjustment Inventory (by Hugh M. Bell; grades 10-12 and college). The manual states that this test provides six measures of personal and social adjustment, submissiveness, emotionality, hostility, masculinity, and femininity. The 200 questions about student self-concept are self-administered; students answer by marking "yes," "no," or "?" on an IBM answer sheet. Although there is no time limit, most students finish in less than 30 minutes. The Adjustment Inventory is scored with stencils.

b. The Gordon Personal Inventory (by Leonard V. Gordon; grades 3-12, college, and adult). The Gordon Personal Inventory consists of 20 multiple-choice items in which students choose from among four phrases the one that is most like them and the one least like them. The four personality traits listed in the manual are "cautiousness, original thinking, personal relations, and vigor." The instrument is self-administered and has no time limit; however, students generally take 10 to 15 minutes to complete it. Stencils are used to correct the inventories. Because of the tenuous relation between the items in this inventory and the subgoals of Goal Two, results require careful interpretation.

c. How I See Myself Scale (by Ira J. Gordon; grades 3-12). Although this instrument is nonpublished, it is one of the few tests which attempts to measure self-concept for younger as well as older students. The scale consists of items in the form of two contrasting statements about self. Between these statements is a five-point scale that the student marks to indicate which of the statements the student feels represents the way she or he is most of the time and the strength of that feeling. The elementary form contains 40 such items; the high school form has 41. Five factors or aspects of self-concept are measured: teacher/school; physical appearance; interpersonal adequacy; autonomy; and academic adequacy. Although hand-scoring is possible, scoring service is available at 25 cents per test. Because the test is not published, its cost is minimal. As with the other tests cited, careful interpretation of results is required.

d. The Mac B Personal Competence Inventory (by Jeanette A. Brown and Mary Ann MacDougall; grades 3-7). Although the Inventory is not yet fully documented, it is included because it attempts to measure self-concept for younger students, as does the How I See Myself Scale. It consists of two indices of affective behavior: the Self-Perception Index and the Peer Acceptance Index. The first, a measure of students' perceptions of the relation of the self to others, to culture, and to itself, contains 33

statements rated on a five-point Likert Scale. The second, a measure of the degree of pupils' acceptance or rejection by their classmates, takes the form of a blank filled in with a student's name and a five-point scale between the phrases "My best friend" and "Never my friend." The Inventory is short and has no time limit. Scoring information is available, but users should be aware that the results will not be a comprehensive evaluation of any of the subgoals of Goal Two.

e. The Tennessee Self-Concept Scale (by William H. Fitts; ages 12 and over). This scale is self-administering, generally requiring less than 20 minutes to complete. A student chooses from one hundred self-descriptive statements "to portray her/his own picture of herself/himself." Separate scores are given in the following areas: self-criticism; positiveness including identity, self-satisfaction, behavior, physical self, moral/ethical self, personal self, family self, and social self; variability; distribution; and time. Scoring requires six to seven minutes per paper.

f. Self-Esteem Inventory (SEI) (by Stanley Coopersmith). This instrument was designed for upper-elementary students, but might be appropriate for older students. Some items are particularly relevant for school situations. Although it reflects the importance of social interaction in self-conceptualization, it does not directly measure the processes identified in the subgoals. It is composed of 58 items.

g. Behavior Rating Form (BRF) (by Stanley Coopersmith). This is a rating form teachers use to observe students in school situations, focusing on the student's behavior in relation to others and the teacher's perception of the student's self-concept. The Form, composed of 13 items, is included to indicate the use of observation in assessing the self-conceptualizing process.

h. Self-Concept of Academic Ability (by Wilbur Brookover). This scale, composed of eight items, has been widely used in research on self-concept and school achievement. It was originally developed for secondary (grade 7-12) students, but elementary and post high-school forms are available. It assesses the student's conception of his or her academic ability in comparison with other students and friends. It does not directly measure the self-conceptualizing process, but reflects the student's self evaluations in reference to others in the student role.

Information about Goal Two instruments is summarized in Table Ia.

Goal Three: Understanding Others

1. *Comments*

An obvious difficulty in measuring Goal Three stems from definitions concentrating on student behaviors (for example, "Acts on the belief

that . . ." and "Withholds judgment . . ."). Proper measurement of such behaviors is not easy because it requires observation of students over an extended period of time. In addition, the behaviors to be observed are related to values and hence may be difficult to define in terms specific enough to be of use in observation.

The nontraditional perspective of Goal Three, focusing on a relativistic value structure, differs in general from that of available tests of interpersonal relations. Most of the tests which were examined concerned students' ability to behave in a school (or middle-class setting) or with students' tolerance for others, but not with their awareness of others' lifestyles and values. Only three instruments were found to be at all appropriate, and even these did not directly measure what was intended by the total goal.

2. *Appropriate Instruments*

a. The Children's Scale of Social Values (by Paul M. Insel and Glenn D. Wilson; grades 3-9). Based on the Wilson-Patterson Conservatism Scale, The Children's Scale of Social Values is made up of 50 items, each of which is a short phrase to which students respond by circling "Yes," "No," or "?." Administration of the scale takes approximately ten minutes, and scoring can be done by hand or by computer. The instrument yields scores for the following areas: religious beliefs; enthnocentrism (intolerance of minority groups); preference for conventional art, clothing, and institutions; respect for authority; and insistence on strict rules and punishments. The score for insistence on strict rules and punishments is interpreted as indicative of an antihedonistic outlook coupled with a strict sexual morality.

b. Getting Along (by Trudys Lawrence; grades 7-9). This instrument was designed to evaluate student behavior in everyday situations and to enable teachers to identify students who may need help in improving their behavior. Getting Along has three parts: (1) "Getting Along With One's Self"; (2) "Getting Along With Others"; and (3) "Getting Along in One's Environment"—and consists of 45 items of two or more captioned pictures followed by incomplete sentences with multiple-choice endings. The instrument has two forms, can be completed in 35 to 40 minutes, and is easily scored. Only items in Part 2, however, are appropriate to the measurement of certain subgoals of Goal Three.

c. The Value Socialization Scales (by Richard L. Gorsuch; grades 4-6). These scales, intended for research use only, have been included here because they were designed to reflect the degree to which a child has learned those values necessary to fit into any society or to choose among the sub-cultures available to him or her. There are two scales: one in

which the student is asked to rate a series of behaviors reflecting basic, middle-class values; and a second in which the student is asked to indicate how much he or she admires a child who performs various acts.

Administration and scoring are simple, but the results require careful interpretation because of the predominance of middle-class value items.

For information on Goal Three instruments, see Table Ib.

Goal Four: Using Accumulated Knowledge to Understand the World

1. *Comments*

No appropriate tests were found that address students' use of accumulated knowledge in the way intended by this goal. Available tests measure the amount of students' accumulated knowledge, but do not examine whether they can use the knowledge appropriately. This is clearly an area in which research and development work are needed.

2. *Appropriate Instruments*

Although unreceived, the American College Testing Program's College Outcome Measures Project (COMP) appears promising for this goal. One of the six areas tested includes "using science and technology." It purports to test the "ability to identify the science/technological aspects of a culture, understand the impact of such activities and products on individuals and the environment, and analyze products for one's own self and the culture." Obviously the test would have to be adapted for a pre-college population if it were useful for secondary schools.

Goal Five: Continuous Learning

1. *Comments*

Goal Five focuses on students' interest in and capability for continuous learning. The measurement of this goal is a relatively new effort in the field of education. Clearly the notions of continuous learning and the self-reliant learner are in need of definitions in the real world of the school where their achievement is measured. To say that a student values learning experiences can be demonstrated by many different types of behaviors, as can a decision to call her or him a self-reliant learner; these behaviors need to be specified for students at all levels.

Because the interest in examining this aspect of learning is recent, few available tests measure these subgoals. No such tests were located for grades K-2. Tests for older students measured their motivation for learning, rather than their valuing of it, or their current practices in self-initiated learning, rather than their capability. The tests cited, although the best available, require careful interpretation in relation to the subgoals.

2. *Appropriate Instruments*

a. Independent Activities Questionnaire (by Stephen P. Klein; grades 9-13). This questionnaire was designed to assess achievement that may not be reflected by a student's grades in school. Each of the 65 major items has biographical subitems (see Table Ic, below) which deal with student efforts requiring individual initiative. The questionnaire takes approximately 45 minutes to complete and yields scores for 19 areas, including the following: politics, leadership, home responsibility, public speaking, and scholarship. Computer-assisted scoring is recommended by the author. Although this type of instrument measures the goal indirectly, it would serve as an indicator of the student's tendency to learn on her or his own.

b. The Jim Scale, Junior Index of Motivation (by Jack Frymier; grades 7-12). This nonpublished measure, normed on a national sample of 3,189 students, takes about thirty minutes to complete. Fifty of the eighty items are scored, yielding a score which represents the student's motivation for achievement. For each item, the student records a sign and a number from −2 to +2 to indicate agreement or disagreement and slight or strong support for the opinion expressed in the item statement. Scoring information is supplied.

c. The Survey of Study Habits and Attitudes (the SSHA) (by William F. Brown and Wayne H. Holtzman; grades 7-12 and grades 12-14). The one hundred items in this survey consist of statements about study habits that students indicate "rarely," "sometimes," "frequently," "generally," or "almost always" apply to them. Separate scores are given for study habits and study attitudes. Students generally take from 20-35 minutes to complete the survey, and hand-scoring is possible.

Information about Goal Five instruments is found in Table Ic.

Goal Six: Mental and Physical Well-Being

1. *Comments*

In contrast to the other goals, the subgoals of Goal Six are relatively straightforward, although they too emphasize student behaviors, rather than mere knowledge. Other than the physical examination by medical personnel in some states, tests of physical well-being for school-age children are not common. Most available tests for mental well-being generally seek to discover students' problems, not their strengths. However, the tests cited for this goal are, for the most part, geared to specific subgoals and measure these directly.

2. *Appropriate Instruments*

a. Health Behavior Inventory, Elementary Level (by Sylvia Yellen; grades 3-6). This inventory consists of 40 illustrated questions to which students respond "Most of the time I do," "Sometimes I do," or "No, I never do." Scores are given for the following areas: personal health, personal cleanliness, nutrition, safety, community health, infection and disease, mental health, and dental health. There is no time limit set, although most students finish in 20 to 30 minutes. Scoring is done by hand.

b. Independent Activities Questionnaire (cited above for Goal Five). Several of the areas assessed in this questionnaire provide information about students' leisure-time activities.

c. Mac B Personal Competence Inventory (cited above for Goal Two). "The Self to Culture" section of this inventory would yield information about a student's perceived relation to his or her culture.

d. Martinek-Zaichkowsky Self-Concept Scale for Children (by Thomas J. Martinek and Leonard D. Zaichkowsky; grades 1-8). Designed to measure children's global self-concept, the Self-Concept Scale is a nonverbal test consisting of 25 sets of pictures. Students respond to each item by marking the picture which is most like them. The following factors are measured: satisfaction and happiness; home and family relationships and circumstances; ability in games, recreation, and sports; personality traits and emotional tendencies; and behavioral and social characteristics in school. The authors state that the test is culture-fair and takes from 10 to 15 minutes to complete.

e. Student Drug Survey (by J. Ray Hays; grades 7-12). Although this survey suffers the limitations of self-report measures, the 88 multiple-choice items may provide information on patterns of drug abuse among secondary school students. Roughly one-third of the questions deal with the frequency of the use of nine categories of substances at three intervals: (1) never used, (2) used in the past six months, (3) used in the past seven days. The remaining questions concern demographic, attitudinal, and factual variables as correlatives of drug use. The survey takes approximately 45 minutes.

f. Thompson Smoking and Tobacco Knowledge Test (by Glen W. Thompson; grades 7-16). The purpose of this test is to measure the smoking and tobacco knowledge of high school and college students. It consists of 25 questions—16 concerning the effects on health of smoking, and nine concerning sociological and historical concepts related to smoking. The test requires approximately 30 minutes to complete, but results indicate students' knowledge, rather than their practices.

Information on Goal Six instruments is found in Table Id.

Goal Seven: Participation in the Economic World of Production and Consumption

1. *Comments*

As was the case for previous goals, the behavioral perspective of Goal Seven makes its measurement with available tests difficult. Currently existing vocational tests are of two types: interest inventories, both personal and occupational; and work value inventories. Neither type of test directly measures the stated subgoals. The definition problem common to the other goals is found here as well; terms such as "informed consumer decisions" and "appropriate knowledge" need to be defined further before the subgoals can be accurately measured.

2. *No Appropriate Instrument Found*

Goal Eight: Responsible Societal Membership

1. *Comments*

The problems inherent in determining whether a student is a responsible member of society relate to the terms used in the subgoals and to the time-delay that may be needed to assess fairly a student's involvement in society. The first frequently mentioned problem is common to all of the goals. Terms such as "values" and "ethical framework" are necessary to the subgoal statements, yet need additional definition for measurement purposes. The second problem is self-evident. How will we know for certain that a student "exercises duties of citizenship" until the student is old enough to vote or participate otherwise as a citizen in his or her society? Many of the desired behaviors are adult and difficult to measure while the student is still in school.

Instruments for school-age children which have been established as reliable predictors of specified criterion adult behaviors would be desirable; however, none were found. The listed instruments were selected on the assumption that the best available estimate of future behavior in an adult setting is similar or related to behavior in the current context. A student who is a responsible member of his school, home, and peer society would more likely continue to be a responsible member of his adult society than would a student who was not responsible in his current contexts.

The problems discovered upon surveying the available tests, again, have been mentioned previously. The available instruments do not measure behaviors, whereas the subgoals focus on the actions of students ("acts," "assumes," "exercises," and so forth). The exception to this general case is the self-report questionnaire, but these may not be accurate appraisals of student behavior since the student does the reporting.

2. *Appropriate Instruments*

a. Biographical Inventory for Students (by Laurence Siegel; grades 12-13). This inventory was designed to elicit factual, biographical information from students through 93 multiple-choice questions, each with five possible alternatives. In Part 1 the student must select only one of the choices; in Part 2 he or she may select as many as are appropriate. The subscale scores include those for political activities, socioeconomic independence, dependence upon the home, and social conformity. Although the measure is self-administering, requiring from forty-five to sixty minutes to complete, the authors recommend machine-scoring.

b. Cooperative Social Studies Tests: Civics (ETS; grades 8-9), and

c. Cooperative Social Studies Test: American Government (ETS; grades 10-12). Each full scale consists of 40 forced-choice (Yes-No) items. Abbreviated scales are available; however, research reported is with the full scale. Each of these tests contains multiple-choice questions devoted to the important concepts, basic principles, and issues of civics and American government, respectively. Charts, maps, cartoons, and graphs are used to test subject matter from the following areas: the Constitution and national government, state and local government, citizenship and political participation, government services, controls and finances, and national defense and international relations. The three skills a student must use to answer the questions are remembering, understanding, and analyzing. There is a time limit of 40 minutes for both tests, and they can either be scored by hand, using stencils, or by machine.

d. Getting Along (cited above for Goal Three). Part III of this instrument is an indicator for the subgoals of Goal Eight, although it does not measure them directly. Furthermore many items on the test do not relate to the subgoals.

e. Nowicki-Strickland Locus of Control Scale (by Stephen Nowicki, Jr. and Bonnie R. Strickland; grades 3-12). The scale consists of 40 questions answered by checking "Yes" or "No." This scale, requiring about 20 minutes to complete, assesses the extent to which reinforcement (the attainment of goals) is attributed to internal or external sources. An abbreviated scale for grades 1-6 is available, but not reported in the research literature. Although the instrument does not directly measure subgoal 5.4, its ease of administration and scoring, coupled with the fact that it does provide an estimate of the factor at work, make it worthy of consideration.

f. Sequential Tests of Educational Progress: Social Studies (ETS; grades 4-6, 7-9, 10-12, and 13-14). The STEP tests in social studies were designed "to measure student development in the broad skills and understandings that every citizen should possess to be effective." Content was taken from the disciplines of political science, sociology and anthropology,

economics, history, and geography to test students' ability to organize, interpret, and evaluate information. There are four levels of the test and two forms at each level. The tests consist of multiple-choice questions. The time limits are 45 minutes for the tests given to grades 4-6 and 7-9 and 60 minutes for those given to grades 10-12 and 13-14.

g. Test of Reasoning in Conservation (Conservation Foundation; grades 7-12). This group test, made up of 45 multiple-choice and matching items, was developed to determine students' knowledge of conservation concepts and their implications. Scoring information and keys are provided, although the test may be machine-scored.

h. Value Socialization Scales (cited above for Goal Three). These scales attempt to measure awareness of the ethical framework mentioned in subgoal 8.3.

Information on Goal Eight instruments is found in Table Ie.

Goal Nine: Creativity

1. *Comments*

Despite the fact that the measurement of creativity has been of interest to researchers for years, the available tests lack the reliability and validity necessary for their widespread use as standardized tests. This is due to the varied nature of creativity, both in its expression and in its evaluation. Agreement as to what constitutes creativity has not been reached, and, as a result, measurement remains difficult, if not impossible. This is clearly reflected by the lack of appropriate tests cited for this goal.

2. *Appropriate Instrument*

Independent Activities Questionnaire (cited above for Goals Five and Six, see Tables Id and Ie). Student responses will indicate indirectly whether they are or have been involved in creative activities.

Goal Ten: Coping with Change

1. *Comments*

Coping with change is a necessity in the world today, and Goal Ten marks an attempt to list the behaviors that students need to survive in a changing world. Traditional tests have not as yet attempted to measure these behaviors, and, as with Goal Nine, only one instrument was located which in any way dealt with the given subgoals.

2. *Appropriate Instrument*

Jim Scale, The Junior Index of Motivation (cited above for Goal Five, see Table Ic). Certain items on this scale, which reflect a student's motivation for achievement, point to his ability to cope with change.

Information for Goal Ten is found in Table Ig.

Table Ia. Summary of Instruments Appropriate to Goal 2

Assessed Subgoals	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
2.0[1]	*The Adjustment Inventory* Consulting Psychologists Press, Inc. 577 College Avenue Palo Alto, Cal. 94306	1962 p	moderate m*	10-12, college	Do you find it necessary to watch your health carefully? Yes No Do you get upset easily? Yes No
2.0	*Gordon Personal Inventory* Harcourt, Brace, Jovanovich, Inc. 757 Third Avenue New York, N.Y. 10017	1963 p	low	3-12, college, adult	M L Prefers to get up early in the morning ___ ___ Doesn't care for popular music ___ ___ Has excellent command of English ___ ___
2.0 2.5[2]	*How I See Myself Scale* Institute for the Development of Human Resources College of Education University of Florida Gainesville, Fla. 71201	1968 n	low m	3-12	Nothing gets me too mad. 1-2-3-4-5 I get mad easily and explode. 1-2-3-4-5 I don't like the way I look. 1-2-3-4-5 I like the way I look. 1-2-3-4-5
2.1 2.3 2.5	*The Mac B Personal Competence Inventory* (also cited at Goal 6) ETS 007 316 (available in ETS *Tests in Microfiche*)	1975 n	low	3-7	*First index:* I have different kinds of friends. Never 1 2 3 4 5 Always *Second index:* My best friend 1 2 3 4 5 Never my friend
2.0	*The Tennessee Self-Concept Scale* Counselor Recordings and Tests Box 6184 Acklen Station Nashville, Tenn. 37242	1964 1965 p	high	7-12, adult	I never do things without thinking about them first. Totally false (1) Mostly false (2) Partly true & partly false (3) Mostly true (4) Totally true (5)

Note: p = published, available from commercial source.
n = not published or available from commercial source.
m = machine scoring available (*at extra cost).

[1] Instrument applies to total goal (".0").
[2] Instrument applies only partially or indirectly to subgoal.

Table Ia. (continued)

Assessed Subgoals	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
					Like Me / Unlike Me
2.1 2.3 2.5	"Self Esteem Inventory" Stanley Coopersmith, *The Antecedent of Self Esteem* (San Francisco: W. H. Freeman Co., 1967)	1967 n	unknown	3-6	My parents and I have lots of fun together. ___ ___ I like to be called on in class. ___ ___ Kids pick on me often. ___ ___
2.0	*Behavior Rating Form* Stanley Coopersmith	1967 n	unknown	teacher observation	Does this child adapt easily to new situations, feel comfortable in new settings, enter easily into new activities? always—usually—sometimes—seldom—never Does this child seek such support and reassurance from his peers or the teacher as evidence . . . or frequently inquires whether he is doing well? always—usually—sometimes—seldom—never
2.0 and 2.1	*Self-Concept of Academic Ability Scale* *Self-Concept of Academic Ability and School Achievement* Wilbur Brookover College of Education Michigan State University	1962 p p	low	Three forms: 3-6, 7-12, Post HS	Where do you think you would rank in your class in high school? a. Among the best b. Above average c. Average d. Below average e. Among the poorest How do you rate yourself in school ability compared with your close friends? a. I am the best. b. I am above average. c. I am average. d. I am below average. e. I am the poorest.

Note: p = published, available from commercial source.
n = not published or available from commercial source.

Table Ib. Summary of Instruments Appropriate to Goal 3

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
3.2	*Children's Scale of Social Attitudes* ETS 008 449 [2]	1970 n	low	5-9	Which of the following do you favor or believe in? Hanging thieves Yes No Divorce Yes No
3.5[1] 3.6[1] 3.7[1] 3.8[1]	*Getting Along* (also cited for Goal 8) ETS 003 235	1965 n	low	7-9	Caption under pictures: Ruth said, "Today is Saturday. There is housework to do, new records to play, and a birthday party this afternoon." Ruth should . . a. ask her mother if it is all right to skip the housework this week b. play the records while she does the housework c. do her share of the housework first
3.2[1] 3.5[1]	*Value Socialization Scales* (also cited for Goal 8) ETS 007 592	1970 n	low	4-6	A child is doing the best he can. a. Always admire b. Sometimes admire c. Always dislike

Note: n = not published or available from commercial source.
[1] Instrument applies only partially or indirectly to the assessed subgoal.
[2] ETS numbers refer to tests available in ETS *Tests in Microfiche*.

Table Ic. Summary of Instruments Appropriate to Goal 5

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Items
5.2[1]	*Independent Activities Questionnaire* (also cited for Goals 8 and 9) ETS 001 518[2]	1965 n	low m	9-12, college	50. Have you ever directed instrumental or vocal music? Yes ___ No ___ If no, go on to question 51. If yes, go to the enclosed question below. (50a. and 50b.) 50a. Have you ever directed music performed publicly and for which you were paid or for which admission was charged? Yes ___ No ___ 50b. Have you ever organized your own instrumental or singing group? Yes ___ No ___ Type of Group ___
5.1[1] 5.2[1] 5.3[1]	*JIM Scale* (Junior Index of Motivation) (also cited for Goal 10) ETS 004 021	1965 n	low	7-12	Late afternoon is the best time of day. −2 −1 +1 +2 Most young people do not want to go to school. −2 −1 +1 +2
5.1 5.2	*Survey of Study Habits and Attitudes* Psychological Corporation 757 Third Avenue New York, N.Y. 10017	1967 p	low	7-12, college	Having too many other things to do causes me to get behind in my school work. a. rarely d. generally b. sometimes e. almost always c. frequently I seem to get very little done for the amount of time I spend studying. a. rarely d. generally b. sometimes e. almost always c. frequently

Note: p = published, available from commercial source.
n = not published or available from commercial source.
m = machine scoring available and, for this instrument, recommended by the author.

[1] Instrument applies only indirectly or partially to the assessed subgoal.

[2] ETS numbers refer to tests available in ETS *Tests in Microfiche*.

Table Id. Summary of Instruments Appropriate to Goal 6

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
6.1 6.2 6.3 6.4	*Health Behavior Inventory* (Currently being revised) Sylvia Yellen 2744 Angelo Drive Los Angeles, Cal. 90024	1962 1979 p	unknown	3-6	Do you stay at home when you are sick even when you have a cold? Yes ___ No ___ Do you use a hairpin or other sharp object to clean your ears? Yes ___ No ___
6.1[1] 6.2[1] 6.4 6.5[1]	*Thompson Smoking and Tobacco Knowledge Test* ETS 003 083[2]	1967 n	moderate	7-12 college	*Part 1* What are the most important reasons why you started to smoke? Please indicate the degree of influence each factor listed had on your behavior. Advertising of some type (TV, radio) a. great influence b. little influence c. some influence d. no influence *Part 2* Since 1950, one professional group has quit smoking in great numbers. a. teachers b. nurses c. physicians d. dentists *Part 3* The substance in tobacco that causes lung cancer is a. carbon from cigarette paper b. nicotine c. some unknown factor in tobacco d. tobacco tars e. carbon monoxide

Note: p = published, available from commercial source.
n = not published or available from commercial source.
[1] Instrument applies only partially or indirectly to the assessed subgoal.
[2] ETS numbers refer to tests available in ETS *Tests in Microfiche*.

Table Id. (continued)

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
8.4	*Student Drug Survey* ETS 001 782	1970 n	low	7-12	How many times have you used solvents to get high in the past seven days? a. none b. 1 or 2 times c. 3 to 5 times d. 6 to 9 times e. 10 or more times
8.9	*Martinek-Zaichkowsky Self-Concept Scale for Children* ETS 007 836	1965 n	low	1-8	*Nonverbal. Students select pictures that represent themselves.*
8.9	*Mac B Personal Competence Inventory* (also cited for Goal 2) ETS 007 316	1975 n	low	3-7	*First index:* I have different kinds of friends Never 1 2 3 4 5 Always *Second index:* My best friend 1 2 3 4 5 Never my friend
8.10	*Independent Activities Questionnaire* (also cited for Goals 5 and 9) ETS 001 518	1965 n	low	9-12, college	50. Have you ever directed instrumental or vocal music? Yes ___ No ___ If no, go on to question 51. If yes, go to the enclosed question below. (50a. and 50b.) 50a. Have you ever directed music performed publicly and for which you were paid or for which admission was charged? Yes ___ No ___ 50b. Have you ever organized your own instrumental or singing group? Yes ___ No ___ Type of Group _____

Note: n = not published or available from commercial source.
ETS numbers refer to tests available in ETS *Tests in Microfiche.*

Table Ie. Summary of Instruments Appropriate to Goal 8

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
8.1[1]	*Test of Reasoning in Conservation* Conservation Foundation 1717 Massachusetts Avenue, N.W. Washington, D.C. 20036	1960 p	low m	7-12	In applying conservation practice to his water supply, man is mainly concerned with a. increasing the amount of precipitation b. increasing evaporation from oceans and lakes c. increasing and improving swampland drainage d. delaying the return of precipitation to the oceans.
8.2	*Sequential Tests of Educational Progress: Social Studies* (STEP) Cooperative Test Division Educational Testing Service Princeton, N.J. 08540	1983	Higher	4-6, 7-9, 10-12, College	*Form 4A* (Following a map) On the map above, which continent does the equator go through? ___ a. Asia ___ b. North America ___ c. Africa ___ d. South America *Form 3A (grades 7-9)* The cartoonist is trying to show that the history of a nation . . . ___ a. has no effect on the things it wants to do in the future. ___ b. makes it impossible for the nation to change. ___ c. gives the people something to be proud of. ___ d. Can slow down the nation's process of change. *Form 2A (grades 10-12)* A passage like the one written above would be most likely to appear in a book written by which of the following? ___ a. an anthropologist ___ b. a biologist ___ c. an astronomer ___ d. an archaeologist

Note: p = published, available from commercial source.
m = machine scoring available.

[1] All instruments on this table apply only partially or indirectly to the assessed subgoals, with the exception of subgoals 8.7 and 8.8.

Table Ie. (continued)

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
8.3[1]	*Value Socialization Scales* (also cited for Goal 3) ETS 007 592[2]	1970 n	low	4-6	A child is doing the best he can. a. Always admire b. Sometimes admire c. Always dislike
8.3 8.4 8.5 8.9	*Getting Along* ETS 003 235	1965 n	low	7-9	Caption under picture: Ruth said: "Today is Saturday. There is housework to do, new records to play, and a birthday party this afternoon." Ruth should . . . a. ask her mother if it is all right to skip the housework this week b. play the records while she does the housework c. do her share of the housework first
8.4	*Nowicki-Strickland Locus of Control Scale* ETS 006 838	1971 n	low	3-12	Are some kids just born lucky? Yes ___ No ___ Do you feel that you have a lot of choice in deciding who your friends are? Yes ___ No ___
8.5 8.7 8.8	*Biographical Inventory for Students* ETS 001 515	1955 n	low m	12, College	*Part 1* How old were you when you first started earning money? (Don't count money earned from relatives.) ___ younger than 10 ___ 10-12 ___ 13-15 ___ 16 or older ___ I have never earned any money.

Note: n = not published or available from commercial source.
m = machine scoring available.

[1] All instruments on this table apply only partially or indirectly to the assessed subgoals, with the exception of subgoals 8.7 and 8.8.

[2] ETS numbers refer to tests available in ETS *Tests in Microfiche*.

Table II. Summary of Instruments Appropriate to Goal 9

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
9.1[1]	*Independent Activities Questionnaire* (also cited for Goals 5 and 8) ETS 001 518 (available in ETS *Tests in Microfiche*)	1965 n	low m	9-12, college	50. Have you ever directed instrumental or vocal music? Yes ___ No ___ If no, go on to question 51. If yes, go to the enclosed question below. (50a. and 50b.) 50a. Have you ever directed music performed publicly and for which you were paid or for which admission was charged? Yes ___ No ___ 50b. Have you ever organized your own instrumental or singing group? Yes ___ No ___ Type of Group ___

Note: n = not published or available from commercial source.
m = machine scoring available and, for this instrument, recommended by the author.
[1] Instrument applies only indirectly or partially to the assessed subgoal.

Table Ig. Summary of Instruments Appropriate to Goal 10

Subgoals Assessed	Test Name & Source	Date & Status	Cost	Grade Range	Sample Item
10.1 10.2 10.3	*JIM Scale* (Junior Index of Motivation) (also cited for Goal 5) ETS 004 021 (available in ETS *Tests in Microfiche*)	1965 n	low	7-12	Late afternoon is the best time of day. −2 −1 +1 +2 Most young people do not want to go to school. −2 −1 +1 +2

Note: n = not published or available from commercial source.

Summary of the Review of Tests

The adequacy with which the identified tests measure all the goals and subgoals proposed by the Committee on Research and Theory is summarized in Tables II and III. As indicated in these two tables, there are many gaps currently existing in the proper measurement of these goals. The number of appropriate instruments located was small, despite extensive review procedures. Furthermore, many of the identified instruments require cautious use. Not all grade levels are equally covered by appropriate instruments; nor are all subgoals. In particular, only one subgoal (6.9) was assessed below grade three and only one-fourth (15) of the 57 subgoals are assessed at any elementary school level. Just slightly over half (54 percent) of the subgoals are assessed at any level.

Although these results are in one sense discouraging; in another sense, they suggest promising directions for research and development activities. With modifications, numerous tests could be adapted to measure these goals. Operating on the premise that the best available estimate of future behavior in an adult setting is similar or related behavior in the current context, other new tests could be specifically developed with the goals in mind. Still another area for development is in the use of methods other than paper-and-pencil tests to measure the achievement of the goals. Observation instruments, attendance records, and longitudinal surveys are approaches which may be more valid for examining such behavioral goals. The use of "constructed" situations to elicit value-revealing behaviors from students appears to be a promising method for assessing some of the more difficult subgoals. The limited findings of the Committee on Research and Theory can be the first step in a new direction for creative measurement of educational goals.

Additional Test Information

For each goal, two additional test lists are given; the first, tests to consider for further research (along with a brief statement of our reservations) and the second, tests or instruments that have not been examined, but are worthy of attention.

Goal Two: Self-Conceptualization

A. *Examined Tests to Consider for Further Research*

1. California Test of Personality (CTP), by Louis Thorpe, W. W. Clark, and E. W. Tiegs. New York: McGraw Hill, 1939-1953 (Buros 5:73). Seems appropriate but needs updating since its last revision in 1953.

Table II. Summary of Identified Appropriate Measures by Subgoals and Grade Levels on Which Assessed

	1	2	3	4	5	6	7	8	9	10
					Goals					
Subgoals					Grade Levels					
1	No tests reviewed	3-7	none	none	7-12 c	3-12 c	none	7-12	9-12	7-12
2		none	3-9	none	7-12 c, a	3-12 c	none	4-12 c	none	7-12
3		3-7	none	none	7-12	3-6	none	4-9	—	7-12
4		none	3-9	none	—	3-12 c	none	7-9	—	none
5		3-12	4-9	none	—	7-12 c	—	7-9	—	none
6		none	3-9	—	—	none	—	12, c none	—	none
7		—	7-9	—	—	none	—	12, c	—	none
8		—	3-9	—	—	none	—	8-12 c	—	none
9		—	—	—	—	1-8	—	7-9	—	none
10		—	—	—	—	9-12 c	—	—	—	—
Total tests identified for goal		5*	3	0	3	6	0	8	1	1

Note: none = no test found; c = college; a = adult; and — = not a subgoal of this goal.
* Four of the five tests did not measure specific subgoals but did measure the goal in general.

Table III. Distribution of Appropriate Instruments Among Goals and Subgoals

Goal	Number of Subgoals	Number of Tests Identified as Assessing Goal	Number of Subgoals Measured	Number of Subgoals Not Measured	Percent of Subgoals Measured
2	6	5	3	3	50
3	8	3	6	2	75
4	5	0	0	5	0
5	3	3	3	3	100
6	10	6	7	3	70
7	4	0	0	4	0
8	10	8	8	2	80
9	2	1	1	1	50
10	9	1	3	6	33.3
Totals	57	21*	31	26	54

* Total is for *different* tests; some tests measured subgoals of more than one goal.

2. Chapin Social Insight, by F. S. Chapin. California: Consulting Psychologists Press, Inc., 1967-68 (Buros 7:51). Still experimental, but in presenting students with social situations and options for behavior, it seems on target.
3. Illinois Index of Self Derogation, by Joseph H. Meyerowitz (ETS 005 754). Normed on educable, mentally retarded children in grades 1 and 2, but the author states that it can be used with normal children in pre-school to grade 2.

B. *Unexamined Tests to Consider for Research*

1. Allport-Vernon Study of Values (high school edition) (Buros 7: 146).
2. Bledsoe Self-Concept Scale (BSCS). *Self-Concept and School Achievement*. New Jersey: Prentice Hall, Inc., 1975.
3. Index of Adjustment and Values, by R. E. Bills, E. L. Vance, O. S. McLean, Jr. *Consulting Psychology* 15 (1951):257-61.
4. Mooney Problem Checklists, by E. F. Lindquist. *Educational Measurement*, p. 722. New York: Psychological Corporation, 1971.
5. Pennsylvania EQA Tests. *Educational Quality Assessment Inventory*. Harrisburg, Pa.: Division of Educational Quality Assessment, Pennsylvania Department of Education.
6. Self-Disclosure Inventory for Adolescents, by Lloyd W. West and Harvey W. Zingle. "A Self-Disclosure Inventory for Adolescents," *Psychological Reports* 24(1969): 439-45.

Goal Three: Understanding Others

A. *Examined Tests to Consider for Further Research*

1. The AB Scales (Attitude-Belief Scales), by M. Fishbein and B. H. Raven. *Human Relations* 15(1962): 35-44.
2. Affectional and Aggressive Observation Checklist, by M. Johnson and J. W. Bommarito. *Tests and Measurements in Child Development: A Handbook*, p. 452. San Francisco: Josey Bass Publishers, Inc., 1971. If combined with SES characteristics of students, this could be a good estimator of the relational behavior of children.
3. California Test of Personality. Cited at Goal Two, AI. Seems appropriate, but needs updating.
4. Cultural Awareness Scale, by Jack Danielson. "Line Simulation of Affect Laden Cultural Cognitions," *Journal of Conflict Resolution* 11(September 1967): 3. Experimental scale measures an "appreciation of the impact of cultural values on psychological processes."

5. Dogmatism Scale and Opinionation Scale, by Milton Rokeach. *The Open and Closed Mind*, pp. 80-87. New York: Basic Books, Inc., 1960. The first scale measures openness or closedness of belief systems; the second measures intolerance.
6. Interpersonal Value Scales, by William A. Scott. *Values and Organizations*, pp. 245-60. Chicago: Rand McNally and Company, 1965.
7. Social Beliefs and Reliefs About School Life. *Evaluations in the Eight Year Study*. Progressive Education Association, 1939.

B. *Unexamined Tests to Consider for Research*

1. Classroom Social Distance Scale, by M. Johnson and J. W. Bommarito at 281.
2. College Outcome Measures Project (COMP). American College Testing Program.
3. Pennsylvania EQA Tests. Cited at Goal Two, B5.

Goal Four: Using Accumulated Knowledge to Understand the World

A. *Examined Tests to Consider for Further Research*

1. Science Curriculum Assessment System, by Charles C. Mathews. *Mirrors of Behavior III: An Anthology of Observation Instruments*. Wyncote, Pa.: Communication Materials Center, 1974. Observation system for recording and rating the behavior of students in science classes. It might be adapted to this goal.
2. Tab Science Test, by David P. Butts. *An Inventory of Science Methods* (ETS 007 741). This test actually tries to measure application rather than knowledge.
3. Critical Thinking Appraisal Test, by Watson-Glaser (Buros 7: 783). Test activities may tap what is desired, but further development is needed.

B. *Unexamined Tests to Consider for Research*

1. College Outcomes Measures Project (COMP). Cited at Goal Three, B2.
2. Pennsylvania EQA Tests. Cited at Goal Two, B5.

Goal Five: Continuous Learning

A. *Examined Tests to Consider for Further Research*

1. Children's Achievement Scale, by Bernard Weiner (ETS 008 47). No statistical information provided in this source.
2. Intellectual Achievement Responsibility Questionnaire, by Virginia C. Crandall (ETS 006 098). Relatively little developmental work as yet.

3. Pictographic Self Rating Scale. Rockwell Center, New York: Acorn Publishing Co. Dated material, but an interesting cartoon approach to the goal.
4. Value Socialization Scales. See Table Ib, under Goal Three. A scale for subgoal 5.1 might be construed from items on these scales.

B. *Unexamined Tests to Consider for Research*

1. Achievement Motivation Projective Tests, by D. McClelland, J. W. Atkinson, R. A. Clark, E. W. Lowell, M. Johnson, and J. W. Bommarito at 174.
2. Beller's Scale of Independence or Autonomy Among Children, by E. K. Beller. "Dependency and Autonomous Achievement Striving Related to Orality and Anality in Early Childhood," *Child Development* 28 (1957): 287-315.
3. Pennsylvania EQA Tests. Cited at Goal Two, B5.

Goal Six: Mental and Physical Well-Being

A. *Examined Tests to Consider for Further Research*

1. Florida Key, by W. Purkey, R. Cage, and W. Graves (ETS 007 323). A short teacher-inferred self-concept scale based on observation of student.
2. Sears Self-Concept Inventory, by Pauline Sears (ETS 000 701). Designed for use with grades 3-6, the inventory needs further developmental work.
3. Self-Concept Rating Scale for Children, by Lewis P. Lipsett (ETS 007 705). This scale needs further developmental work, but is appropriate for grades 4-6.
4. A Study of Young People (ETS 007 526). This is a self-report of drinking patterns and opinions, but was used for males only and provided little developmental information.

B. *Unexamined Tests to Consider for Research*

1. (1) Dental Health Practices Inventory; (2) Scale for the Measurement of Attitudes toward Healthful Living; (3) Stimulants and Depressants Test; (4) Tuberculosis Information Test, by Marian Solleder. *Evaluation Instruments in Health Education.* Washington, D.C.: American Association for Health, Physical Education and Recreation and the National Education Association, 1968.
2. Health and Safety Education, by Lester D. Crow and Loretta C. Ryan (Buros 5:555). National Achievement Tests.
3. Index of Adjustments and Values. Cited at Goal Two, B3. In the work cited, at page 27.

4. Pennsylvania EQA Tests. Cited at Goal Two, B5.
5. Physical Fitness Tests, by F. J. Hayden. *Physical Fitness for the Mentally Retarded: A Manual for Teachers and Parents.* Ontario, Canada: Metropolitan Toronto Association for Retarded Children. Author states test is useful for grades 1 and 2 non-handicapped children. Canadian norms.
6. *Measuring Human Behavior,* p. 77, by Dale C. Miles, B. Mathew, and Ralph B. Earle, Jr. New York: Teachers College Press, 1973.
7. Things I Like To Do, by J. Anderson. "The Relation of Attitude to Adjustment," *Education* 73(1952): 210-18.

Goal Seven: Participation in the Economic World of Production and Consumption

A. *Examined Tests to Consider for Further Research*

1. Children's Knowledge About Occupations Test, by Richard C. Nelson. (Johnson and Bommarito at 437). Uses colored slides of 16 occupations.
2. Thurstone Interest Schedule, by L. L. Thurstone (Buros 4:745). An old and insufficiently validated test, but uses an interesting approach.

B. *Unexamined Tests to Consider for Research*

1. Making Career Decisions. *A Plan for Evaluating the Quality of Education Programs in Pennsylvania, Vol. I: Basic Program.* ETS, 30 June 1965. A report from ETS to the State Board of Education.
2. Pennsylvania EQA Tests. Cited at Goal Two, B5.

Goal Eight: Responsible Societal Membership

A. *Examined Tests to Consider for Further Research*

1. Allen Scale of Beliefs (ETS 007 044). This test measures agreement or disagreement with American socio-political values, but little developmental work has been done.
2. Florida Key (ETS 007 323). Cited at Goal Six, A1.
3. Intellectual Achievement Responsibility Questionnaire (ETS 006 098). Cited at Goal Five, A2. Relatively little developmental work has been done, but the questionnaire is designed to determine students' perceptions of responsibility for intellectual and academic success or failure.
4. Machiavellianism Scales, by Dale Lake (Lake and others at 36).

Currently for experimental use only, but the approach is interesting.

5. Orientation Inventory (ORI) (Lake and others at 34). Validity is sufficient only for use with groups; with more development, it may be appropriate for individual use.
6. Russell Sage Social Relations Test, by Russell Sage (ETS 001 531). A group measure of children's skills in social relations, it now yields a group score, but might be adapted to give individual scores as well.
7. Social Interest Scale, by James E. Crandall (ED 008 333). The scale is currently normed by adults, but its purpose, to assess a person's interest in the welfare of others, makes it a good candidate for adaptation for school-age subjects.

B. *Unexamined Tests to Consider for Research*

1. Children's Locus of Control Scale, by I. Bialer. "Conceptualization of Success and Failure in Mentally Retarded and Normal Children," *Journal of Personality* 22(1961): 303-20.
2. F-Scale, by T. W. Adorno and E. Frenkel-Brunswik. *The Authoritarian Personality*. New York: Harper and Row, 1950.
3. Interest Index. *Evaluation in the Eight Year Study*. Progressive Education Association, 1939.
4. Interpersonal Competence Scoring System (Lake and others at 31).
5. Orientation Scale, by Milton Rokeach and Ray M. Lorce. *Psychology of Education*, pp. 469-70. New York: The Ronald Press Company, 1970.
6. Pennsylvania EQA Tests. Cited at Goal Two, B5.
7. "Political Efficacy" and "Sense of Citizen Duty," by Angus Campbell and Geral Gurin. In *The Voter Decides*, pp. 187-89 and 194-99. Evanston Illinois: Row Peterson and Co., 1954.
8. Physical Causality Test, by R. E. Muuss. "The Transfer Effect of a Learning Program in Social Causality on an Understanding of Physical Causality," *Journal of Experimental Psychology* 29(1961): 231-47.
9. Scale of Economic Belief. *Evaluation in the Eight Year Study*. Progressive Education Association, 1939.
10. Social Attitudes Scale, by D. B. Marris. "A Scale for Measuring Attitudes of Social Responsibility in Children," *Journal of Abnormal and Social Psychology* 55(1957): 322-36.
11. Stages of Moral Development, by Kohlberg (Lake and others at 80).

Goal Nine: Creativity

A. *Examined Tests to Consider for Further Research*

1. Biographical Inventory for Students (ETS 001 515). See Table Id, under Goal Eight. It may be possible to get an estimate of subgoal 9.2 from the ratio of creative activities selected (music, literature, art) to other activities although some control of the quality of the activities would be needed.
2. Christensen and Guilford Fluency Tests, by P. R. Christensen and J. P. Guilford (Buros 6:544). California: Sheridan Psychological Services, Inc.
3. Denny-Ives Creativity Test, by Denny and Ives (ETS 000 794). This test is restricted to creativity in the dramatic arts; however, it yields scores for fluency, redefinition, originality, and sensitivity.
4. Gross Geometric Forms, by Ruth B. Gross (ETS 005 614). Currently requires special administration and scoring, but the approach is good.
5. Pennsylvania Assessment of Creative Tendency (ETS 008 309). This measures creative tendency rather than performance.
6. Pikunas Graphoscopic Scale (ETS 004 175). This test currently needs interpretation by a highly trained person, but if simplified would be appropriate.
7. Remote Associates Test (RAT), by Sarnoff A. Mednick and Martha T. Mednick (Buros 7:455). Boston: Houghton Miflin. Adult norms only.
8. Torrance Tests of Creative Thinking, Research Edition, by Paul E. Torrance. Revision of *Minnesota Tests of Creative Thinking*. Columbus, Ohio: Personnel Press, 1966. The tests look good, but need further developmental work.
9. What Kind of Person Are You?, by Paul E. Torrance (ETS 007 206). Athens, Georgia: Department of Psychology, University of Georgia. This measures the tendency to function creatively, rather than measuring actual behavior.

B. *Unexamined Tests to Consider for Research*

1. College Outcome Measures Project. Cited at Goal Three, B2.
2. Draw-A-Scene Test, by J. H. West. "Correlates of the Draw-A-Scene," *Journal of Clinical Psychology* 16(1960): 1.
3. Interpersonal Value Scales. Cited at Goal Three, A6.
4. Novelty Experiencing Scale, by Pamela H. Pearson. "Relationships Between Global and Specified Measures of Novelty Seeking," *Journal of Consulting and Clinical Psychology* 34(1970): 199-204.

5. Pennsylvania EQA Tests. Cited at Goal Two, B5.

Goal Ten: Coping with Change

A. *Examined Tests to Consider for Further Research*

1. The Cassel Group Level of Aspiration Test (CGLAT), by Russell N. Cassel. Los Angeles: Western Psychologic Services, 1952-57.
2. Gordon Personal Profile (GPP), by Leonard V. Gordon (Buros 6:103). Profile could perhaps be adapted for this goal.
3. Survey of Personal Values (SPV), by Leonard V. Gordon (Buros 6:103). Chicago: Science Research Associates, Inc.
4. Thorndike Dimensions of Temperament (TDOT), by Robert L. Thorndike (Buros 7:154). New York: Psychological Corporation. Not quite on goal target, but it could be adapted.

B. *Unexamined Tests to Consider for Research*

1. Do You Agree?, by J. W. Getzels and P. W. Jackson. *Creativity and Intelligence: Explorations With Gifted Students,* pp. 135-36. New York: John Wiley and Sons, Inc., 1962.
2. Pennsylvania EQA Tests. Cited at Goal Two, B5.
3. Rydel-Rosen Ambiguity Tolerance Scale, by A. P. MacDonald. "Revised Scale for Ambiguity Tolerance: Reliability and Validity," *Psychological Reports* 26(1960): 780-89.

Chapter 4

A Model for Research on Goal Achievement

The Committee's work on research and theory emerged from concern over the current, almost exclusive, concentration by the lay and educational communities on a limited range of educational goals commonly identified as basic skills. The achievement of fundamental communication and computation competencies does not guarantee the achievement of other educational goals, nor does their attainment provide much insight into the effectiveness of educational programs in the achievement of other long-range educational outcomes.

As the Committee on Research and Theory undertook to suggest needed research to enhance knowledge of the effectiveness of educational programs in achieving all educational goals, we became increasingly aware of the complexity of the task. It seemed apparent to all of us that most educational research has focused on very limited goals and a very narrow range of learning environmental factors which may affect the achievement of those goals. In this part of our report, we have sought to develop a model to assist in developing research on the relationship between *all* aspects of the learning environment and the attainment of *all* educational goals identified in Chapter II.

We have not reviewed the present state of research relative to the model developed here. From our collective experience, knowledge, and judgment, we conclude that there is relatively little known about the impact of various educational organizations and experiences on human skill in coping with change or participation in the economic world. In like manner, there is little known about the kind of educational environment that is most effective in producing other educational outcomes. We have sought, therefore, to suggest a frame of reference that may assist in identifying appropriate and important questions that need answers. We believe that this model will assist in the comprehensive evaluation of any educational program, humanistic or not. Such evaluation is dependent on the identification and examination of all pertinent educational environment variables which may affect educational outcomes of concern to the investigator.

The purpose of this chapter, then, is to present a research model that identifies several types of educational variables which may affect outcomes

and to offer some sample sets of research hypotheses derived from this model.

The Limitations of Current Research

Our efforts to develop a comprehensive model for research on factors affecting the outcomes of schools emerged from recognition of several limitations in contemporary educational research.

Exclusive Focus on Basic Skills

Perhaps the most pressing and obvious limitation of research on school outcomes is its almost universal focus on basic communication and computational skills. *We recognize and emphasize the importance of basic skills but we also recognize that we know little about the achievement of the other nine sets of goals which we have identified.* We find little evidence on which to base conclusions about the effect of school environments and teaching-learning processes on the achievement of either basic skills or other goals.

The variables that are hypothesized to affect outcomes have commonly concentrated on non-school variables or the kinds of inputs that are made into the school environment. It is known that the racial and socioeconomic backgrounds of students are associated with their levels of reading and math achievement. It is also known that the teacher-pupil ratio, educational level of teachers, expenditures for education, and other inputs explain little of the differences in the achievement of the basic skills as commonly measured (Coleman and others, 1966). The family background and school input variables are frequently presumed to represent what occurs in the school. Since the school has little control over the characteristics that children bring there, and other school inputs do not seem to explain the variance in achievement of basic cognitive skills, scholars have frequently concluded that what happens in the schools makes no differences in the learning outcomes. Although this conclusion may be valid, it is hardly appropriate to arrive at such a conclusion without examining the wide range of school environmental factors and teaching-learning processes that may affect both the immediate (Brookover and others, 1979) and long-range outcomes of education.

A number of scholars have examined the long-range outcomes and several have concluded that schooling has little effect on later life roles. (Jencks and others, 1972, Hauser and others, 1976). Others have concluded that the level and quality of schooling make a significant contribution. Jencks and his associates (1979) have modified earlier conclusions

about the contribution of schooling to economic success. After reviewing a number of studies, Hyman and his associates (1975) concluded that levels have other significant effects. They indicate that the higher the school levels, the more informed the person is in terms of (1) academic knowledge, (2) knowledge of current public affairs, (3) continuing to read more newspapers, books and magazines, (4) actively seeking to stay informed about areas of vital interest such as health and elections, (5) participating in continuing education, either formal or self-taught, and (6) knowing about popular cultures such as sports or movie stars. These benefits remain as the person grows older (further from schooling). They are not the effect of socioeconomic status inputs, but rather are the direct effects of schooling; for example, the college graduate from a low-income family and one from a high-income family are more similar in benefits than college graduates and high school graduates of high-income families. The same holds true for other factors influencing the effects of education; that is, when the data were controlled for the effects of age, religion, sex, social class, geographical distribution, and current social status, the differences in the benefits of schooling were still maintained.

We do not yet have conclusive evidence on the effects of schooling on adult human behavior, but the pursuit of such evidence is a worthy endeavor.

Disregard of Total Learning Environment and Multiple Goals

Another limitation of contemporary research on the effects of educational programs is the concentration on a specific characteristic or a single outcome of a school program without examination of the context of other school variables within which it occurs. Research on specific materials or methods of teaching a particular skill is extensive, but this is seldom examined in the context of the *total school environment* or the multiple outcomes, intended or unintended, which may result from the particular method or materials of teaching.

An assessment of associated outcomes of a particular method and the conditions under which it is effective or ineffective may lead to very different conclusions. For example, the language experience approach to teaching a reading skill may be very effective in a carefully defined school situation but, when located in a different school social situation, its effectiveness may be significantly different. In the achievement of a particular math skill, the students' understanding of themselves and others may be affected in unintended and undesirable ways. In similar fashion, a particular teaching process may be effective in students acquiring designated knowledge but do little or nothing to assist them in becoming responsible members of society.

Time Limitation

The limitation of time makes research on the effectiveness of school programs in achieving educational goals very difficult. The assessment of the degree to which some goals and subgoals have been achieved is nearly impossible during the school years. Although some indicators of the likely effects of school programs on continuous learning may be possible, the actual evidence on whether the students of a given generation in a given school will continue autonomous learning habits must await post-school years. A few educational projects have now undertaken longitudinal studies, but there is little basis on which particular school learning environments can be associated with the behavioral goals identified for the post-school years. Comprehensive understanding of the relationship between school environment or teaching-learning events and the behavioral goals of education must await comprehensive longitudinal research.

Inadequate Measurement

Although there are many other limitations to educational research, the final one we wish to identify is the inadequacy of the means of measuring or assessing the outcomes, the characteristics of the school learning environment, and teaching-learning processes. Researchers are quite sophisticated in measuring some basic cognitive outcomes, but have much to learn about other behavioral measurements. Furthermore, although much progress has been made in the last decade on the measurement and identification of significant characteristics of learning environments and teaching-learning processes, the major portion of the task remains undone.

Perhaps the educational research community should direct its energies to the development of adequate measures in new areas of both goals and school characteristics rather than multiplying the studies of narrowly defined methods and their effectiveness on narrowly defined skills.

Studies that use the socioeconomic background of students as a proxy for crucial characteristics of school environments that are otherwise undefined and unmeasured contribute little to our knowledge of the effect of various school environmental characteristics.

A Model for Formulating Research on School Learning

ASCD and educators generally are constantly confronted with this question: "What kinds of educational programs and/or processes are most likely to produce the desired behavioral outcomes in the learner?" This

seemingly simple and direct question becomes very complex when we consider the full range of factors that may affect learning and the multiple outcomes desired. When confronted by the complexities of the total learning situation, the Committee on Research and Theory sought to develop a format or model to classify the many variables involved and the sets of desired outcomes. Figure 5 (at pp. 56-57) diagrams the model which developed from our efforts to conceptualize the relationship of learning environmental variables and the various types of outcomes. Some explanations of this model and the rationale for it are appropriate.

Out-of-School Factors—Category I

The rectangle at the left of the diagram, identified as Category I, indicates that there are complex sets of out-of-school forces or variables which may affect a school environment and, in turn, the outcomes of the school experience. There is much research on family socioeconomic background, racial identity of families, and aspects of the community in which the school is located which supports a hypothesized relationship with teaching-learning processes and the outcome of schooling. Emphasis on these out-of-school variables have led many to conclude that most of the explained variance in the achievement of basic skills is accounted for by these out-of-school factors. Researchers ignore the possibility that what occurs in the school environment might not reinforce the impact of family background and out-of-school forces on learning outcomes. Contemporary research has also ignored the relationship of out-of-school factors to desired outcomes other than basic skills. For example, we know very little about how family background or community variables relate to continuous learning or skill in coping with change.

The placement of out-of-school factors at the left hand side of the diagram indicates that, to some extent at least, these variables operate prior to and may affect the functioning of school variables identified in Categories II, III and IV.

School Input Factors—Category II

School Input Factors are, to some degree, a transition from the out-of-school factors to in-school variables. Inputs include many of the variables that traditionally have been considered factors that determine the quality of schools. Category II includes the *number of professional personnel, the qualification of these professional personnel,* the *facilities* provided in the school, the length and regularity of *student attendance.* Some of the input characteristics are significantly related to the *expenditures* for

education. *Expenditures have therefore frequently been used as a measure of school inputs.*

Much of the research on school inputs ignores the possible relationship of these factors to other types of school variables and the possible relationship to learning outcomes other than basic skills. The location of Category II in Figure 5 suggests the hypothesis that school input factors may be influenced by out-of-school variables and, thus, affect other school variables as well as learning outcomes.

School Environment—Category III

Category III is concerned with school environment factors. The physical environment, such as arrangement of space, is a relevant aspect of the school environment that may facilitate certain types of learning processes or put limitations on various instructional programs. We would emphasize, however, that school learning environment involves much more than the physical characteristics of that environment. The school is not only a physical structure but a social system which encompasses organizational and cultural characteristics. *The social organization of the school involves grade classifications, staff relationships, patterns of authority, status-role definitions, size of organizational units, and numerous other social structural characteristics. Common expectations, evaluations, beliefs and norms of behavior which may be identified as the school culture are also a part of the school social system and a significant part of the school environment.*

The location of school environment in the Figure 5 model suggests the hypothesis that out-of-school and school input factors may affect the school environment which, itself, may affect the teaching-learning processes and school learning outcomes.

There is an increasing body of research on the characteristics of the school social system and its relationship to a limited range of educational outcomes. Very little is known, however, about the manner in which the school environment affects teaching-learning events or the achievement of educational goals.

Teaching-Learning Processes or Events—Category IV

The fourth category of variables is identified as teaching-learning processes or events. The category includes all of the patterns of interaction and communication between teacher-students, student-students, and all of the specific behaviors that occur in teaching-learning situations. Many teaching-learning events are designed to result in specific learning, but

others are more or less unplanned processes that occur in the teaching-learning situation. Since teaching-learning processes are the variables which *presumably* affect school learning most directly, the Committee on Research and Theory chose to concentrate on specific types of teaching-learning processes or events as the focus for developing the research designs that follow. We hypothesize that the nature of the teaching-learning events may be affected by school environment, school input, and out-of-school variables. We also hypothesize that teaching-learning processes lead to immediate learning outcomes that in turn may or may not be productive in achieving the desired educational goals.

There has been a great deal of research on some aspects of teaching-learning processes, such as the relationship of reading programs or teaching methods on the achievement of reading skills. These research efforts on teaching-learning processes have frequently ignored the school environment in which they occurred and the other learning outcomes.

Immediate Learning Outcomes—Category V

Category V suggests that immediate learning outcomes result from teaching-learning events and involve many different types of behavior. The immediate learning outcomes may or may not be directly linked to the desired goals of education.

The Goals of Education to be Attained

The goals of education as identified by the Committee and discussed in Chapter II of this report are identified as Clusters A, B, C, and D in Figure 5. The location of basic skills in Cluster A suggests the hypothesis that the mastery of basic communication and mathematics skills facilitates the achievement of the other goals of education. We do not suggest that basic skills are more important than other goals, but perhaps the achievement of these skills is significant in the process of achieving other goals. The Cluster B position simply indicates relationships hypothesized in our discussion of goals and subgoals: that self-conceptualization, understanding others, and use of accumulated knowledge facilitate to some degree the achievement of the goals identified in Clusters C and D. For example, it seems that the acquisition of knowledge and its use is sometimes prerequisite to participation in the economic world or coping with change. In similar fashion, understanding others may be prerequisite to becoming a responsible member of society or a mentally healthy person. The possible interrelationships of the various goals and subgoals identified in Clusters A, B, C, and D have been discussed previously. These are perceived as

long-range goals for all educational programs. We, therefore, hypothesize that out-of-school factors as well as the school variables identified in Categories I through IV may affect achievement of the goals identified in Clusters A-D.

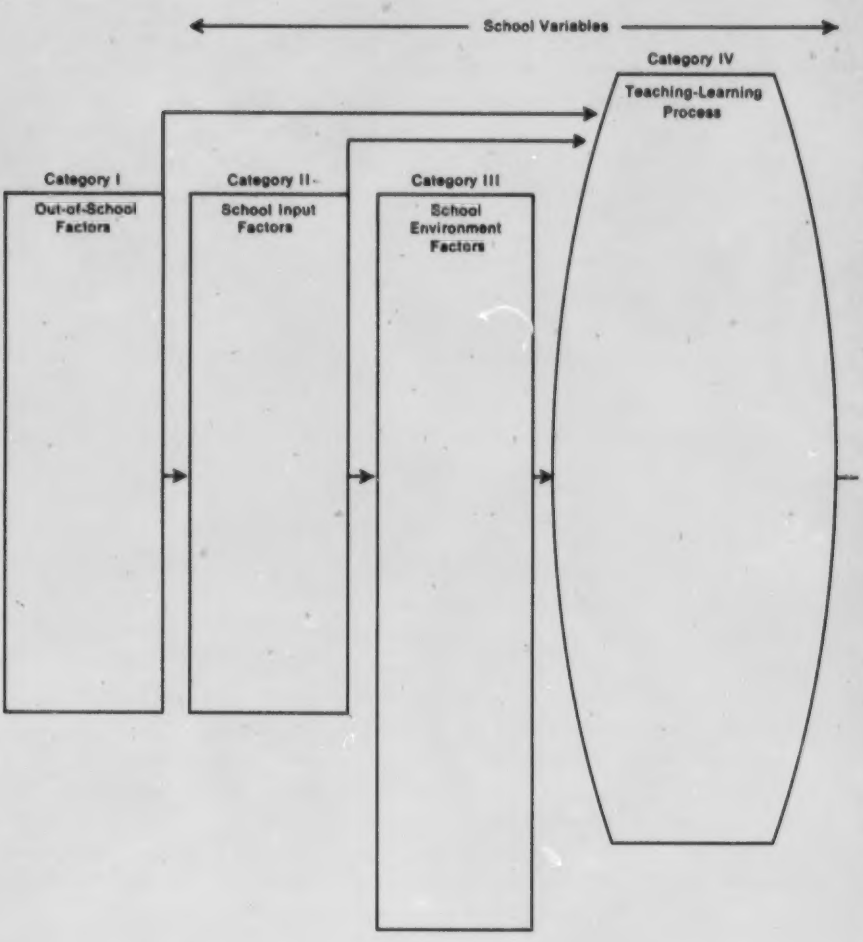
The purpose of the research model as diagrammed in Figure 5 is to assist in the identification of out-of-school and school factors that may affect the attainment of educational outcomes. We suggest that the assessment or evaluation of educational programs must recognize the possible contribution of each category of school and out-of-school factors to these educational outcomes. In short, the total educational system involves a complex of many variables that may perform in various ways to produce or fail to produce the goals of education.

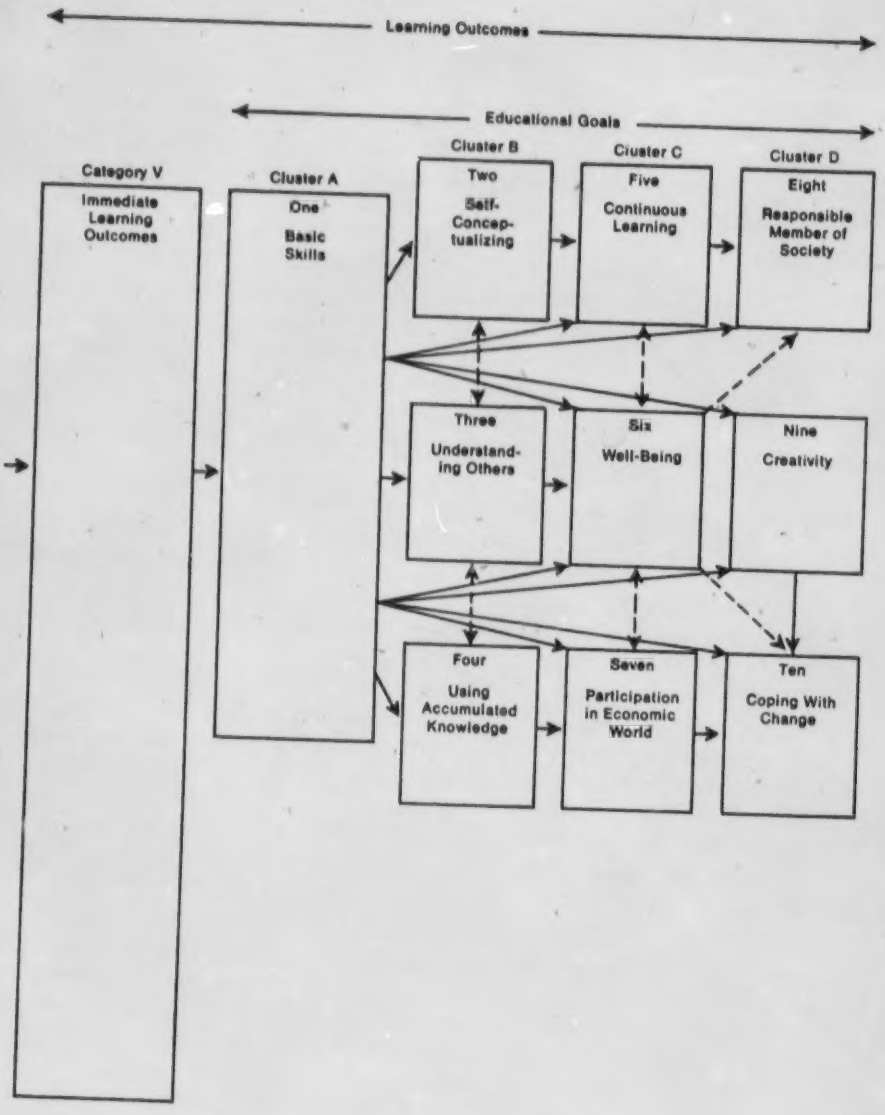
Utilization of The Model

Steps in the utilization of the hypothesized model may be identified as follows:

1. Determine the educational problems or research areas of particular concern.
2. Identify the variable(s) of research concern.
3. Classify the variable(s) according to the category or cluster into which it falls.
4. Place each variable into the model at its appropriate location.
5. Work backwards from each variable of concern to identify as many as possible of the relevant variables which impact upon it.
6. Work forward in the model to identify as many as possible of the potential consequences or effects of the variable concerned.
7. Classify the variables identified in steps 5 and 6 and enter them at their appropriate location in the categories or clusters until the full model has been explicated.
8. Once the full model is developed, determine how much of it must (and can) be accounted for in the investigation of the concerned variable and specify hypotheses to be tested.
9. Select or devise ways of gathering data about all the variables in the model (or portion thereof) which are to be investigated.
10. Analyze the data.
11. Interpret the data in terms of the *full* model as specified in Step 7, being careful to consider potential effects of variables in the model which were neither measured nor controlled.

Figure 5. Educational Research Model—Basic Structure




Learning Outcomes
Educational Goals
Category V
Immediate Learning Outcomes
Cluster A
One
Basic Skills
Cluster B
Two
Self-Concep-tualizing
Three
Understand-ing Others
Four
Using Accumulated Knowledge
Cluster C
Five
Continuous Learning
Six
Well-Being
Seven
Participation in Economic World
Cluster D
Eight
Responsible Member of Society
Nine
Creativity
Ten
Coping With Change

The next section of this chapter presents several examples of the use of the model through Step 8. Chapter Three has already presented recommendations for measures of some outcomes that may be selected for use in Step 9.

Teaching-Learning Processes or Events

Research on the effectiveness of educational programs in achieving desired outcomes could focus on any in-school or out-of-school factors. For two reasons the Committee on Research and Theory chose to focus its primary attention on the teaching-learning events. The first of these reasons was the fact that considerable significant research has examined out-of-school, school input, and some school environmental factors. These studies have given little attention to the specific teaching-learning processes that may relate to school outcomes. We, therefore, chose the teaching-learning events as the starting point for the development of some research designs which would reflect the total process. That is, both the antecedent out-of-school and school variables and the subsequent immediate learning outcomes and long range educational goals would be related to the specific teaching-learning process.

The second reason for our decision to focus on teaching-learning events was the underlying concern of the Association for Supervision and Curriculum Development for humanistic educational programs and the impact of such programs. It seemed to us that the crux of an educational program which might be identified as humanistic would be found in the teaching-learning processes occurring in the school.

Each research model begins with the identification of particular teaching-learning processes or events. The evaluation of any school instructional program must be based upon the outcomes resulting from that program. We believe that the humane qualities of an educational program will be reflected in the teaching-learning processes that characterize the program, and in the outcomes of that program. Therefore, an examination of these processes and their outcomes should reveal significant knowledge of humanistic education.

The range of teaching-learning processes is almost unlimited. The identification of all such events that could occur in the educational process could not be undertaken by this Committee. A comprehensive review of past research and identification of needed research on the relation of educational programs to outcomes would necessitate the development of a taxonomy of teaching-learning events. Such a task would be formidable and the Committee chose not to attempt it. Rather, we identified some

types of teaching-learning processes that involve potentially critical dimensions of humanistic versus nonhumanistic educational programs. These are not suggested as being exhaustive or most important by any criteria. They reflect the Committee members' biases regarding significant aspects of teaching-learning processes, but we trust they illustrate the kind of research that needs to be done on the relationships of educational programs to educational outcomes.

The characteristics of the teaching-learning processes used in the development of possible research designs are as follows:

1. Flexibility of student movement and interaction
2. Types of cooperation and competition
3. Content of instruction
4. Patterns of support, encouragement, and reinforcement
5. Patterns of reactions to feelings

By using the model and starting with the teaching-learning processes as the crucial school variable, a number of hypotheses are suggested concerning the relationships of these processes to both out-of-school and other school factors as well as to the immediate and long-range outcomes of schooling.

Sample Research Designs

It should be noted that the sample designs presented in this section are suggestive and not extensive. They identify important areas of needed research on the relationship between school programs and educational goals. They should also suggest the need for ASCD or other agencies to initiate comprehensive programs of research on educational goal attainment.

The following series of hypotheses is concerned with the relation of selected teaching-learning processes to out-of-school and school variables on the one hand and to immediate outcomes and desired educational goals on the other.

Flexibility of Student Movement and Interaction in Teaching-Learning Activities

This teaching-learning process focuses primarily on students' freedom to move about the instructional space and interact with others while engaged in learning activities. However, this degree of flexibility in movement and interaction also reflects the patterns of authority and control exercised by teachers. Student freedom to move about and talk with other

students without the teacher's permission indicates that students make decisions about their activities in this domain and perhaps others. This apparently is evidence that authority is shared by the students.

The degree to which students move about and interact with other students has commonly, in recent years, been associated with the concept of open or traditional classroom organization. We do not, however, intend the hypotheses suggested in this research model to encompass all aspects of the open-traditional classroom concept.

In similar fashion there are numerous aspects of flexibility of movement and interaction in the classroom. Some involve cooperation and competition examined in another section. We obviously cannot identify all aspects of movement and interaction, but we have identified a few types of the processes involved in teaching-learning activities:

1. Students move about the classroom freely and are encouraged to talk with each other.
2. Students move about freely and are permitted limited interaction with other students.
3. Students move about the classroom freely, but talk with other students only with the teacher's permission.
4. Students move about the room only with the teacher's permission but are encouraged to talk with each other.
5. Students move about the room and talk with each other only with the teacher's permission.

The following hypotheses suggest possible relationships between flexibility of movement and interaction and out-of-school variables, school inputs, and school environment on one hand and the relation of varying degrees of flexibility and learning outcomes on the other. Figure 6 provides an outline of the hypothesized relationships.

A. *Hypotheses concerning the impact of out-of-school factors on flexibility of student movement and interaction in teaching-learning activities*

1. Middle-class community patrons are more likely to permit and encourage flexible (open) patterns of movement and interaction than lower class community patrons.
2. Ethnic background of the school community affects the degree of flexibility of movement and interaction considered appropriate.

B. *Hypotheses concerning the impact of school input factors on flexibility of student movement and interaction in teaching-learning activities*

1. Teachers trained to tolerate classroom noise are more likely to permit students freedom of movement and interaction in teaching-

learning activities than teachers less tolerant of noise.

2. Teachers trained to permit and/or encourage student-initiated activity are more likely to permit students freedom of movement and interaction in teaching-learning activities than teachers trained to initiate instructional activities.
3. Teachers trained to maintain control of student activities are more likely to restrict student movement and interaction in teaching-learning activities than teachers trained to share control.
4. Administrative definition of teacher authority role affects the degree of flexibility of student movement and interaction in teaching-learning activities.
5. Building structural characteristics regarding space, sound absorption, and visibility affect the flexibility of student movement and interaction.

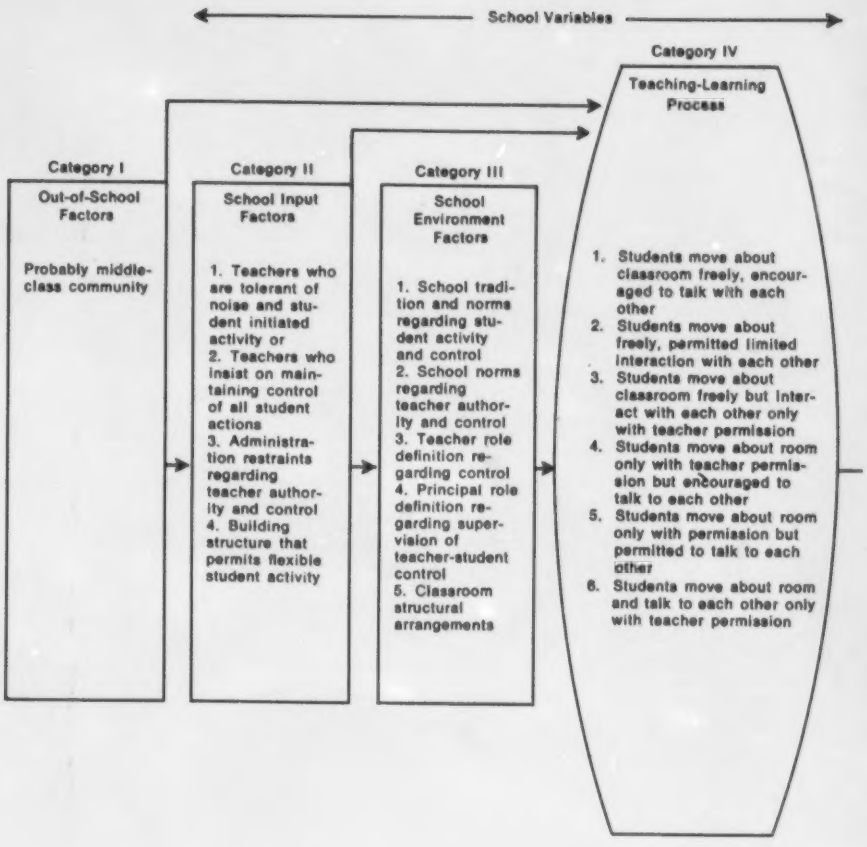
C. *Hypotheses concerning the impact of school environment factors on flexibility of student movement and interaction in teaching-learning activities*

1. School traditions and norms regarding student freedom of movement and interaction affect classroom patterns of movement and interaction.
2. School norms regarding teacher authority and control affect flexibility of student movement and interaction.
3. Teacher authority role-definitions in the school social system affect the degree of flexibility of student movement and interaction permitted in teaching-learning activities.
4. Principal's definition of teachers' functions in the classroom affects flexibility of movement and interaction in the classroom.
5. Classroom structural and space arrangement (movable chairs, activity centers) affect the flexibility of movement and interaction in teaching-learning activities.

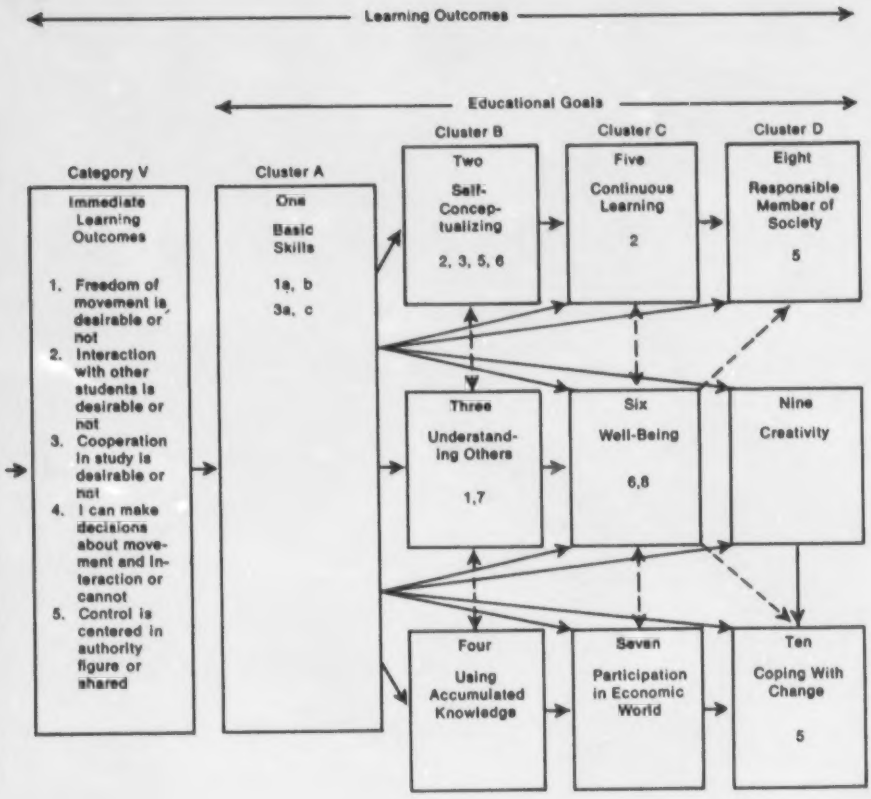
D. *Hypotheses concerning the relationship between flexibility of student movement and interaction and immediate learning outcomes*

1. The degree of flexibility of movement affects students' beliefs about the desirability of physical activity in learning activities.
2. The degree to which students are permitted to talk to each other affects their judgment of the value of such interaction in learning activities.
3. Freedom of interaction among students encourages cooperation in learning activities.
4. Freedom of movement and interaction increases the frequency with which students make decisions.

Figure 6. Flexibility, Movement, and Interaction


School Variables
Category I
Out-of-School Factors
Probably middle-class community
Category II
School Input Factors
1. Teachers who are tolerant of noise and student initiated activity or
2. Teachers who insist on maintaining control of all student actions
3. Administration restraints regarding teacher authority and control
4. Building structure that permits flexible student activity
Category III
School Environment Factors
1. School tradition and norms regarding student activity and control
2. School norms regarding teacher authority and control
3. Teacher role definition regarding control
4. Principal role definition regarding supervision of teacher-student control
5. Classroom structural arrangements
Category IV
Teaching-Learning Process
1. Students move about classroom freely, encouraged to talk with each other
2. Students move about freely, permitted limited interaction with each other
3. Students move about classroom freely but interact with each other only with teacher permission
4. Students move about room only with teacher permission but encouraged to talk to each other
5. Students move about room only with permission but permitted to talk to each other
6. Students move about room and talk to each other only with teacher permission

EDUCATIONAL RESEARCH MODEL



5. Restricted movement and interaction affect the degree of acceptance of teacher authority and control.
6. Freedom of movement and interaction affects the sharing of control with others.

E. *Hypotheses concerning the relationship between flexibility of student movement and interaction and the attainment of educational goals*

1. Restricted movement enhances ability to acquire information through listening.
2. Freedom of interaction and movement enhances acquisition of information through observing.
3. Freedom of student interaction enhances the ability to share information through speaking.
4. Freedom of student interaction enhances ability to communicate through nonverbal means.
5. Freedom of interaction increases the ability to distinguish between significant and nonsignificant others.
6. Extensive interaction among students increases facility in using significant others as referents and disregarding nonsignificant others.
7. Extensive interaction among students develops ability to function in several different social situations.
8. Extensive interaction among students enhances ability to perceive accurately, assess validly and respond appropriately to others' evaluations in various role situations.
9. Interaction among students increases their knowledge that persons differ and are similar in many ways.
10. Freedom of interaction among students encourages them to seek interaction and feel comfortable with others.
11. The degree of interaction among students affects self-reliance and autonomous learning.
12. The degree of interaction affects students' ability to adapt to environmental constraints while seeking.
13. Freedom of movement and interaction enhances ability to maintain personal integration while functioning flexibly in varied situations.
14. Flexible interaction with others enhances rational behavior based on reasonable perceptions of self and society.
15. Freedom of interaction among students enhances ability to work together in groups to achieve mutual goals.
16. Freedom of movement and interaction enhances tolerance of ambiguity.

Types of Cooperation and Competition in Teaching-Learning Activities

The teaching-learning process involves various types of cooperation and competition among students. Cooperation is defined as students working together to achieve certain common outcomes. Cooperation can involve small groups of students or larger aggregates with considerable division of labor in the cooperative process.

Competition is the process in which an individual or group seeks to excel another individual or group. Success in competition is attained by superior achievement of a person's or group's particular outcomes. Success, therefore, may result from the high performance of one competitor or the poor performance of another.

Within any teaching-learning situation, cooperation among individuals may be encouraged or prohibited. The same may be true of competition. Individual competition for specific rewards tends to reduce the cooperation among individuals.

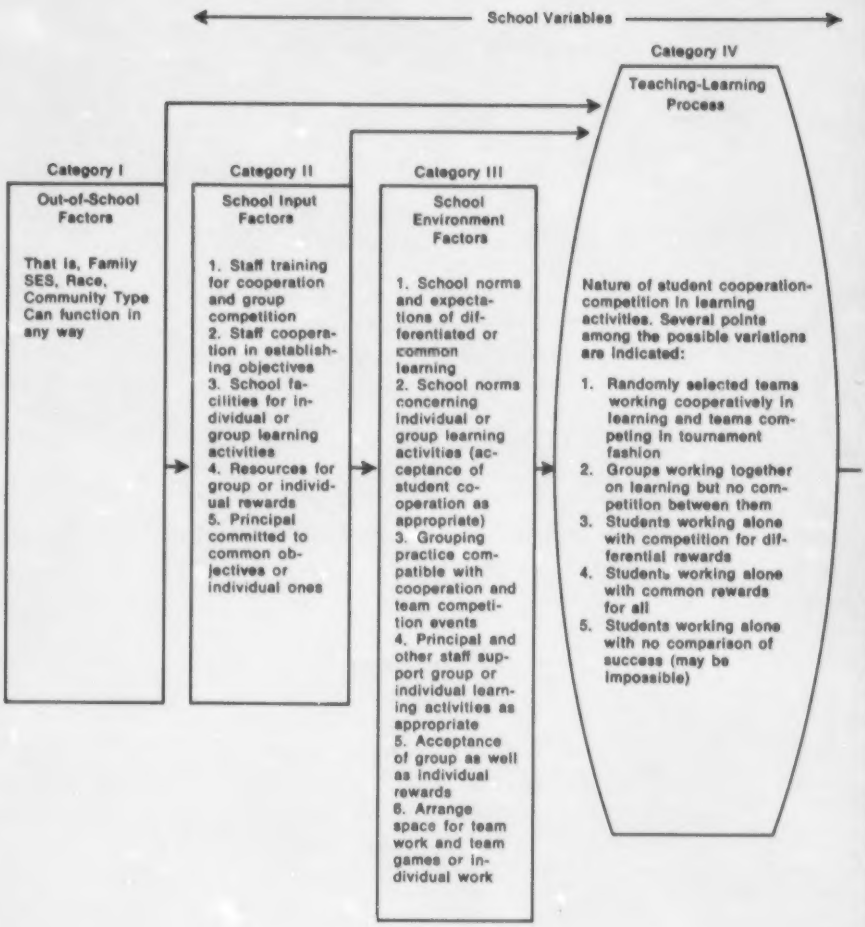
The outline of the research focusing on cooperation and competition in teaching-learning processes is presented in Figure 7. There are many variations in the degree to which students may cooperate and/or compete with each other in teaching-learning activities. A few possible variations in competitive and cooperative processes or the combinations of the two are identified.

The following five points are suggestive of significant differences in the types of cooperation and/or competition in the learning process events:

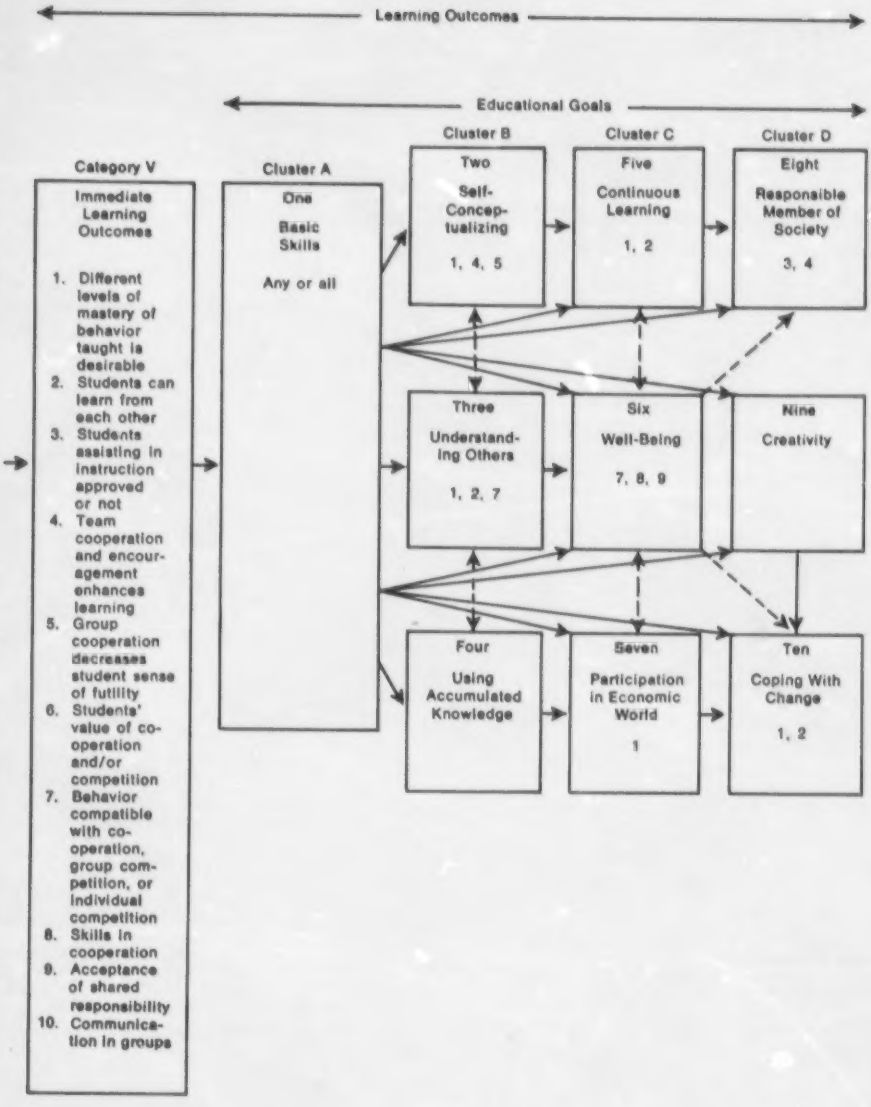
1. Randomly selected teams working cooperatively in learning activities within each team but competing with other teams
2. Student teams working together on learning activities, but no competition between teams
3. Individual students working alone and competing with other students for differential rewards
4. Individual students working alone with little or no competition and common rewards for all
5. Individual students working alone with no comparison of work achieved

The hypotheses which follow suggest the various types of student cooperation-competition and a series of relationships that may exist between out-of-school factors, school inputs, school environment variables, immediate learning outcomes and educational goals. First, we state possible hypotheses concerning (1) out-of-school variables and student cooperation-competition, (2) the relation between school input and cooperation-

Figure 7. Cooperation-Competition


School Variables
Category I
Out-of-School Factors
That is, Family SES, Race, Community Type Can function in any way
Category II
School Input Factors
1. Staff training for cooperation and group competition
2. Staff cooperation in establishing objectives
3. School facilities for individual or group learning activities
4. Resources for group or individual rewards
5. Principal committed to common objectives or individual ones
Category III
School Environment Factors
1. School norms and expectations of differentiated or common learning
2. School norms concerning individual or group learning activities (acceptance of student cooperation as appropriate)
3. Grouping practice compatible with cooperation and team competition events
4. Principal and other staff support group or individual learning activities as appropriate
5. Acceptance of group as well as individual rewards
6. Arrange space for team work and team games or individual work
Category IV
Teaching-Learning Process
Nature of student cooperation-competition in learning activities. Several points among the possible variations are indicated:
1. Randomly selected teams working cooperatively in learning and teams competing in tournament fashion
2. Groups working together on learning but no competition between them
3. Students working alone with competition for differential rewards
4. Students working alone with common rewards for all
5. Students working alone with no comparison of success (may be impossible)

EDUCATIONAL RESEARCH MODEL



competition, (3) the relation of school environmental factors to cooperation-competition, and (4) the relation of patterns of cooperation and competition to immediate and long-range student outcomes.

A. *Hypotheses concerning the impact of out-of-school factors on cooperation and competition in teaching-learning activities*

Since cooperation and competition exist in the United States in any type of community and socio-economic or racial strata, we hypothesize that community-type, race or other out-of-school factors place no restraints on use of competition and/or cooperation in the teaching-learning process.

B. *Hypotheses concerning the impact of school input factors on cooperation and competition in teaching-learning activities*

1. School environment variables
   a. Cooperatively developed staff objectives produce common learning norms.
   b. Cooperatively developed staff objectives promote cooperative student norms.
   c. Staff orientation to individual reward practices promotes emphasis on individually differentiated outcomes.
2. Teaching-learning processes of cooperation and/or competition
   a. Prior or current socialization of staff in organization and use of team games is essential for team cooperation and competition.
   b. Staff willingness to set common objectives is essential for cooperative teaching-learning processes.
   c. Staff insistence on different objectives for individual students discourages both group competition and cooperation among learners.
   d. Group competition is more likely to occur between similar groups, for example, high school seniors are not likely to compete with first graders.
   e. Administrative approval and arrangement for team rewards are essential prerequisites for cross-classroom team competition.

C. *Hypotheses concerning the impact of school environment factors on cooperation and competition in teaching-learning activities*

1. Learning objectives
   a. Common learning objectives for all students promote cooperation within groups and team competition among student teams.
   b. Individually differentiated objectives promote individual competition and minimize cooperation among students.

2. Grouping practices
   a. Homogeneous grouping practices promote individual competition within groups and minimize intergroup competition.
   b. Heterogeneous grouping practices facilitate between-group competition and within-group cooperation.
3. Staff commitment to individually differentiated student objectives prevents group cooperation on common objectives and competition between groups.
4. School emphasis on individual work promotes individual competition and prevents within-group cooperation.
5. School norms providing for group rewards promotes within-team cooperation and between-team competition.
6. School norms providing for individual rewards promote individual competition.

D. *Hypotheses concerning the relationship between cooperation-competition and immediate learning outcomes.*
   1. Individual competition with differential rewards results in the acceptance of different levels of achievement as desirable.
   2. Group competition with group rewards enhances belief that common group achievement is possible.
   3. Within-group cooperation and group competition enhances specific immediate learning outcomes.

E. *Hypotheses concerning the relationship between cooperation-competition and the attainment of educational goals*
   1. Within-group cooperation and between-group competition in learning activities:
      a. enhances the achievement of basic skills more than individual competition.
      b. facilitates students' interaction with each other and recognition that self-concept is a function of this interaction.
      c. promotes understanding that values and behaviors are learned from others, and that values and behavior differ from one social group to another.
      d. increases the acquisition of the principles and concepts of the sciences, arts, and humanities, and the application of this knowledge.
      e. promotes the acquisition of knowledge about careers.
      f. develops skill in determining when a risk is worth taking.
   2. Cooperative and competitive interaction in learning activities:
      a. assists in the perception of self in varied social roles and social situations.

b. facilitates the assessment of self in different situations.
c. results in understanding that individuals differ and are similar in many ways.
d. develops rational behavior based on reasonable perceptions of self and society.

3. Cooperation in learning activities:
   a. enhances the likelihood that students will feel comfortable with others in *heterogeneous* groups who are different in race, religion, social strata or personal characteristics and will seek interaction with them.
   b. helps students to value continuous learning experiences.
   c. develops skill in functioning flexibly in varied situations.
   d. promotes positive self-perceptions and sense of well-being.
   e. develops persons who act in accordance with a basic ethical framework.
   f. develops individuals who assume responsibility for their own acts.
   g. enhances willingness to work for goals based on realistic personal performance standards.
4. Develops self-reliant learners with common rewards through individual noncompetitive learning activities.

Content of Instruction in the Teaching-Learning Process

A growing number of researchers are concluding that the crucial variable in predicting learning outcomes is the content studied. What these researchers appear to conclude is that *students learn what is taught and do not learn what is not taught*. Further, they conclude that the *amount of time spent teaching* a topic or skill *predicts* better than any other variable (including teaching methods) level of *achievement*. Of course, these conclusions are commonsensical and one wonders why it has taken 50 years of educational research to conclude the obvious. There are many such common sense notions in education, but only some are true. At any rate, there should be no doubt that the content of instruction and the time allocated to it must be considered crucial determinants of school-related outcomes.

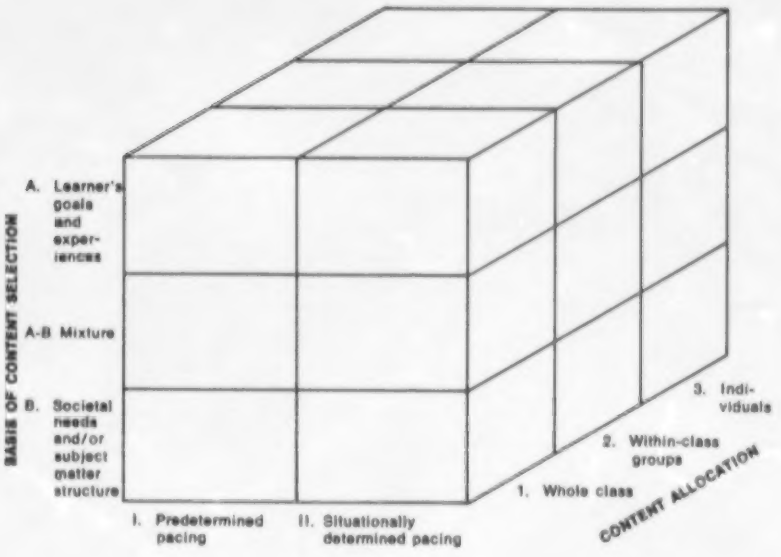
For discussion as a teaching-learning event, content is considered as the result of a process of curriculum decision-making. With this perspective in mind, we can attempt to refine our thinking by considering the dimensions of instructional content. The following dimensions, although not comprehensive, suggest the range of decisions which must be made regarding content.

1. Who makes which decisions?
   a. individual student
   b. teacher-student
   c. teacher
   d. team of teachers
   e. department or administration
   f. agency external to school
2. To whom is the content allocated?
   a. individual student
   b. within-class groups
   c. whole class
   d. all classes in school
   e. all classes in district
3. On what basis is content selected and sequenced?
   a. student interest
   b. student ability and developmental readiness
   c. diagnoses of missing prerequisites
   d. teacher interests and abilities
   e. structure of subject matter
   f. societal problems or expectations
   g. district or state guidelines or tests
   h. textbooks
4. How diverse are the content options available?
   a. highly diverse
   b. highly restricted
5. What is the content emphasis?
   a. cognitive, affective, psychomotor
   b. recall, comprehension application, analysis, synthesis, evaluation
6. How flexible is the pacing of content?
   a. predetermined (before the instructional activity)
   b. situationally determined (during instructional activity)

For illustrative purposes, three of the factors mentioned above were selected to define the parameters of a teaching-learning event to be considered in a research design. They were: (1) content allocation, (2) basis of content selection, and (3) flexibility of pacing. Figure 8 summarizes the levels of the factors considered.

Teaching-learning events described in terms of these three factors define the degree of individualization of content provided within a classroom. Disregarding for the moment all other dimensions of curriculum decision-making, the Committee on Research and Theory selected several types of activity within the teaching-learning process for the development

Figure 8. Three-Dimensional Matrix of Selected Factors Defining Individualization of Content



of potential research hypotheses. Each type samples a cell within the three-dimensional matrix above; however, not all cells are sampled.

The cells selected are identified below by a combination of letters and Roman and Arabic numerals which refer to the levels of the three factors of the matrix. For example, the cell on the lower-left-front corner of the matrix is identified as IB1. It represents predetermined pacing of content selected in accordance with societal needs and/or subject matter structure, allocated to the whole class. Similarly, the upper-right-back corner of the matrix is identified as IIA3. It represents situationally determined pacing of content selected in accordance with the learner's goals and experiences, allocated to individuals.

One other distinction needs to be made before the selected cells are discussed. Although treated as a single factor, "Situationally determined pacing," is clearly multidimensional. For example, decisions about pacing of content might be made on the basis of time required for mastery, duration of student interest, or coordination with current events. For purposes of this illustration, only mastery is considered, that is, pacing situationally

determined by the amount of time required for mastery of the content under consideration.

The types of activities selected for deriving hypotheses are as follows:

1. *Cell IB1:* This is the "traditional" whole-class, grades instructional method. It represents the predetermined pacing of content selected in accordance with societal needs and subject matter structure, allocated to the whole class. In this cell, the time is predetermined on some basis other than consideration of the particular learners, for example, by dividing the number of units to be covered by the weeks in a school year. When this time has expired, the class moves on to new content, regardless of whether prior content has been learned.

2. *Cell IA-B2:* This might be a variety of the familiar within-class "ability grouping." Typically, there is predetermined pacing of content selected in accordance with societal needs/subject matter structure, allocated to a relatively permanent within-classroom group. Some adaptation of content is done to make it more relevant to the learners' needs, capabilities, interests or background experiences.

3. *Cell IA2:* This is the familiar "interest" group. It might be a skills study unit on map reading. The teacher might decide that a group of students that is interested in "other countries" will spend a week learning to read maps. Each student selects the country whose maps he or she will use to develop map-reading skills. In other words, this cell represents predetermined pacing of content selected on the basis of the learner's needs/experiences, allocated to within-class groups.

4. *Cell IAB3:* This is the "free-time" concept. The teacher sets aside some portion of time, say Friday afternoons, during which each learner can work on a learning activity or project of his or her choice. So, in this case, the cell describes predetermined pacing of content selected in accordance with the learner's goals/experiences, allocated to individuals.

5. *Cell IIB1:* This is a variation of the "traditional" whole-class method. In item 1 above (Cell IB1), the time for the content was predetermined on some basis not involving learners, that is, by dividing the number of units to be covered by the number of weeks in the school year. When this time has expired, the class moves on to new content regardless of whether the prior content has been learned. In Cell IIB1, the difference is that the amount of time spent on the content would be determined by the amount of time required for mastery. In other words, this cell represents situationally determined pacing of content selected in accordance with societal needs/expectations and/or subject matter structure, allocated to a whole class.

6. *Cell IIB2:* This might be exemplified in "skills groups" which are formed on the basis of common skills to be learned as defined by a skill's scope and sequence for the school. Each group is maintained until those particular skills are learned, then regrouped for learning other skills. Thus, there is situationally determined pacing of content selected in accordance with societal needs/expectation and subject matter structure allocated to a within-class group.

7. *Cell IIB3:* A good example of this is "individually prescribed instruction." The teacher selects from a skill's scope and sequence or a curriculum guide the learning activities needed by a particular student, gives her or him the prescription, and allows the student to work at the prescription until it is completed. In this case, content selected in accordance with societal needs/expectations and subject matter structure, is allocated to an individual and pace is situationally determined by the time required for mastery.

8. *Cell IIA-B1:* This is one type of "core" curriculum. The whole class is involved in learning activities around a "core" of content with "project groups" or "study groups" specializing in some area of the content, but everyone is expected to learn certain "key" concepts or skills. New "cores" are not introduced until those required "keys" are mastered. Content is selected upon a mixture of the learner's goals/experiences along with societal needs/expectancies and subject matter structure with pacing situationally determined by the time required for mastery. "Key" content is allocated to the whole class.

9. *Cell IIA3:* This is "personalized" instruction. A good example is a reading approach in which the learners select their own books to read and receive instruction in individual conferences with the teacher as they finish the books they have selected. In this cell, pacing is situationally determined, content is selected on the basis of the learner's goals/experiences and is allocated to the individual.

Figure 9 presents several of the possible relationships between the teaching-learning process (Content of Instruction) and out-of-school factors, school inputs, school environment variables, immediate learning outcomes, and educational goals. These potential relationships are explicated as researchable hypotheses.

A. *Hypotheses concerning the impact of out-of-school factors on source and pacing of instructional content in the teaching-learning process*
   1. The more proficient a student is in oral expression, based upon previous language experiences in the home environment, the more likely that experiences and goals will be accepted as legitimate

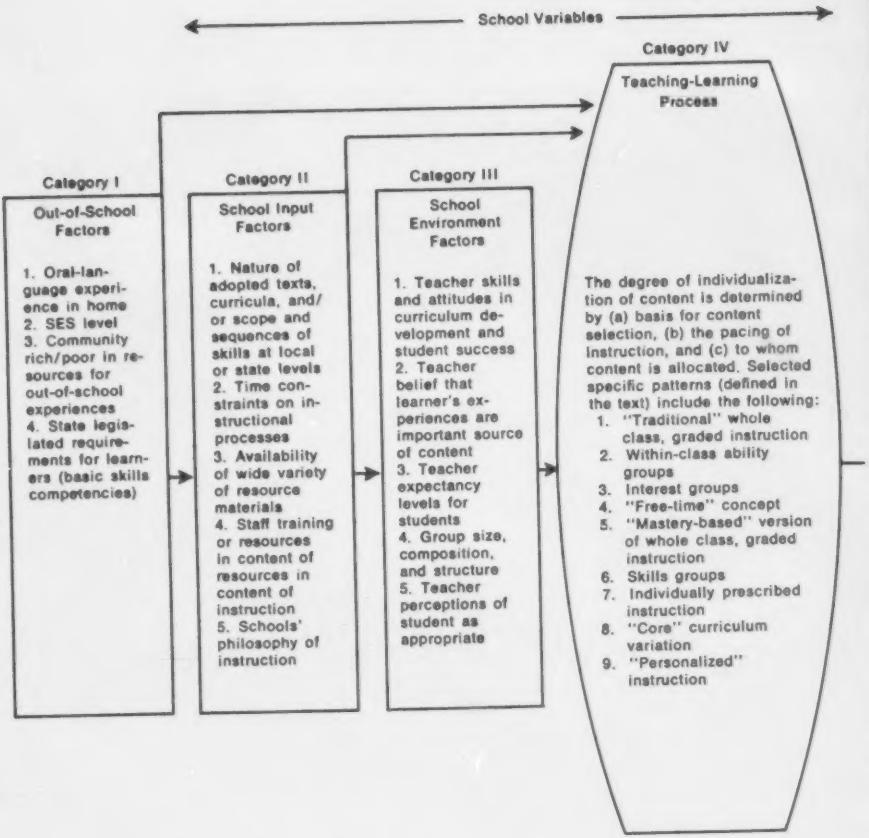
sources of instructional content.

2. If the community is rich in possibilities for many and varied out-of-school experiences for students, the more likely the student's experiences and goals will be accepted as legitimate sources of instructional content.
3. The competency requirements legislated by states act as guides for the teacher's selection of instructional content.
4. The socio-economic level of students affects the variety of experiences students bring to the learning situation.

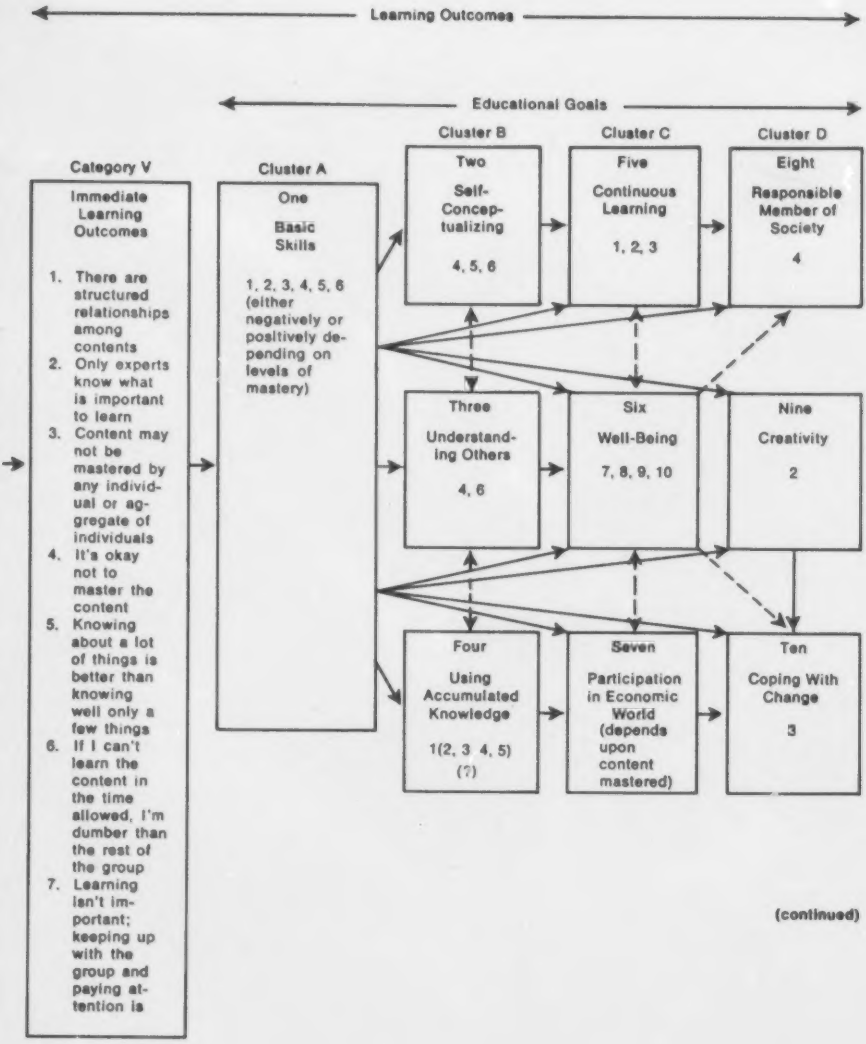
B. *Hypotheses concerning the impact of school input factors on instructional content in the teaching-learning process*

1. School Environment Variables
   a. Adopted tests, curricula, and/or scope and sequences of skills might adversely influence the teacher's perceptions of (a) self as a facilitator or guide, (b) the student as an appropriate curriculum decision-maker, and (c) expectancy levels for students.
   b. Time constraints on instructional processes decrease the teacher's expectancy levels for students.
   c. The school's philosophy of instruction influences teachers' perceptions of (a) their role as information giver, guide, or facilitator, (b) student motivation as affected by relevancy of content, and (c) beliefs that the learner's experiences are an important source of comfort.
   d. Staff training in the utilization of personal and community experiences or resources in instruction increases teachers' skills and attitudes in curriculum development and response to students' goals and needs.
2. Teaching-Learning Process
   a. Adopted texts, curricula, and/or scope and sequence of skills tend to (a) increase the use of fixed time units for presentation of content, (b) decrease the degree to which curriculum decisions are made in response to learners' abilities, goals, and experiences, and (c) reduce the amount of content allocated to individuals rather than groups.
   b. Time constraints on the instructional processes influence the teacher's flexibility in using the learner's abilities, goals, and experiences in making curriculum decisions.
   c. Availability of a wide variety of resource materials tends to increase the teacher's flexibility in (a) using learner's abilities, goals, and experiences as determinants of curriculum decisions and (b) allocating content to individuals rather than groups.

Figure 9. Content of Instruction

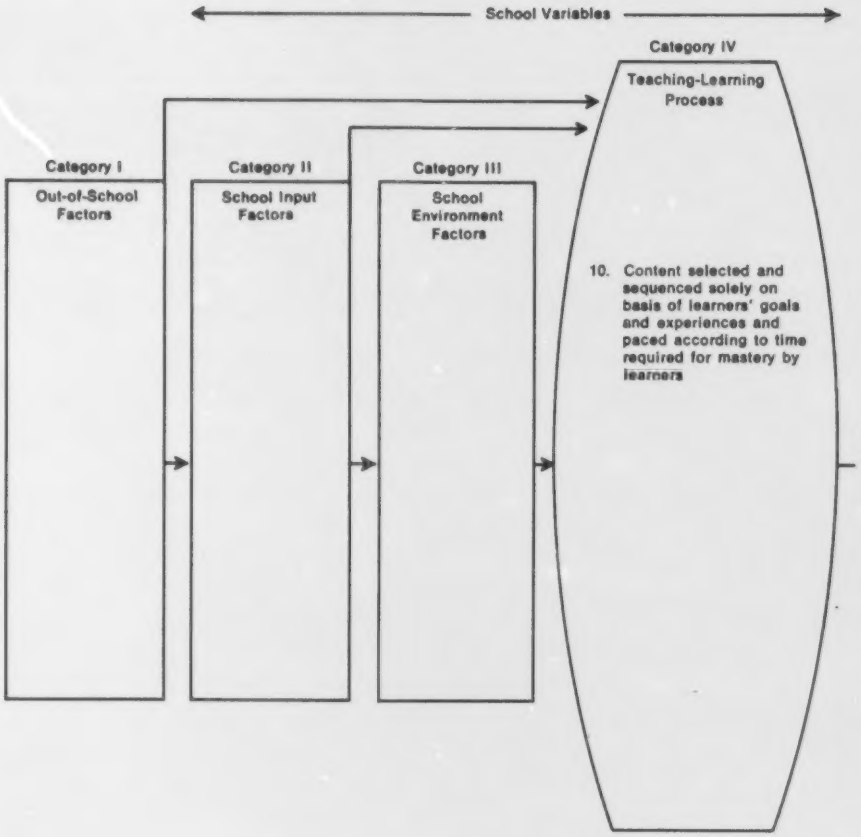

School Variables
Category I
Out-of-School Factors
1. Oral-language experience in home
2. SES level
3. Community rich/poor in resources for out-of-school experiences
4. State legislated requirements for learners (basic skills competencies)
Category II
School Input Factors
1. Nature of adopted texts, curricula, and/or scope and sequences of skills at local or state levels
2. Time constraints on instructional processes
3. Availability of wide variety of resource materials
4. Staff training or resources in content of resources in content of instruction
5. Schools' philosophy of instruction
Category III
School Environment Factors
1. Teacher skills and attitudes in curriculum development and student success
2. Teacher belief that learner's experiences are important source of content
3. Teacher expectancy levels for students
4. Group size, composition, and structure
5. Teacher perceptions of student as appropriate
Category IV
Teaching-Learning Process
The degree of individualization of content is determined by (a) basis for content selection, (b) the pacing of instruction, and (c) to whom content is allocated. Selected specific patterns (defined in the text) include the following:
1. "Traditional" whole class, graded instruction
2. Within-class ability groups
3. Interest groups
4. "Free-time" concept
5. "Mastery-based" version of whole class, graded instruction
6. Skills groups
7. Individually prescribed instruction
8. "Core" curriculum variation
9. "Personalized" instruction

EDUCATIONAL RESEARCH MODEL

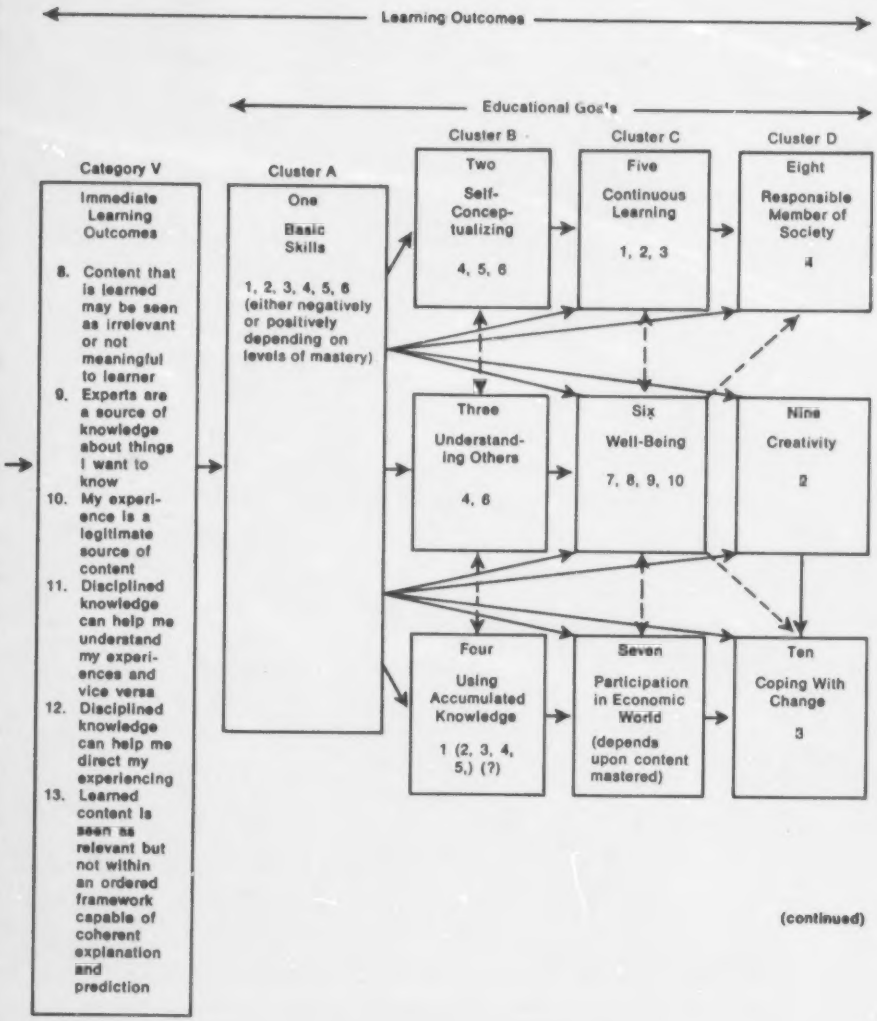


(continued)

Figure 9. Content of instruction (continued)

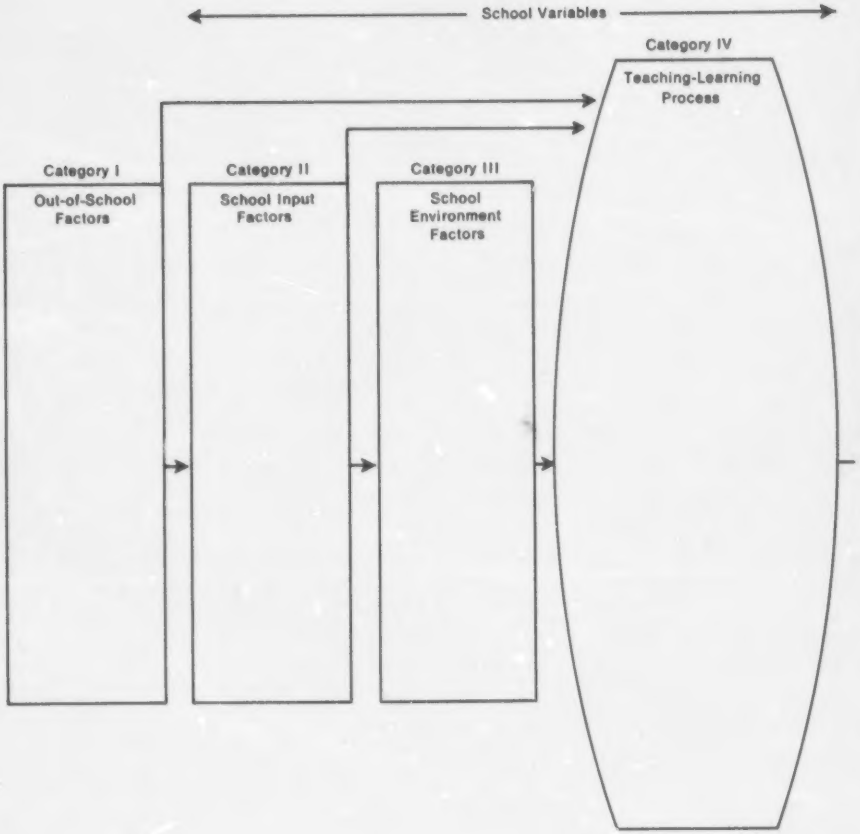

School Variables
Category IV
Teaching-Learning Process
Category I
Out-of-School Factors
Category II
School Input Factors
Category III
School Environment Factors
10. Content selected and sequenced solely on basis of learners' goals and experiences and paced according to time required for mastery by learners

EDUCATIONAL RESEARCH MODEL

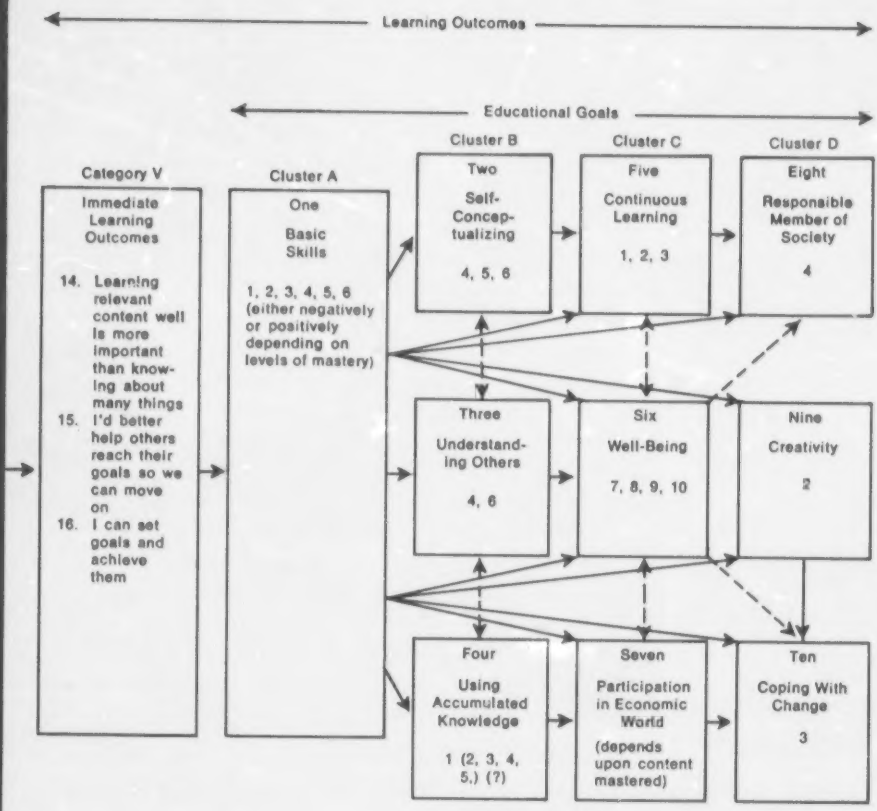


(continued)

Figure 9. Content of Instruction (continued)



EDUCATIONAL RESEARCH MODEL



C. *Hypotheses concerning the impact of school environment factors on instructional content in the teaching-learning process*

1. The teacher's perceptions of self as information giver, guide, or facilitator affect instructional content such that teachers who have information-giver perceptions tend to determine curriculum on the basis of the subject matter structure and societal needs/expectations while those with facilitator perceptions tend to utilize the learner's abilities, goals, and experiences in curriculum decision-making.
2. The more skilled the teacher is in curriculum development and student success promotion, the more the learner's abilities, goals, and experiences are used in curriculum decision-making.
3. If the teacher believes that the learner's experiences are an important source of content, the learner's goals and experiences are treated as legitimate determinants of instructional content.
4. The teacher's expectancy levels for students help to determine content decisions.
5. Small heterogeneous groups with a variety of out-of-school experiences tend to increase both the teacher's utilization of the learner's goals and experiences as sources of instructional content and the degree to which content is allocated to individuals or small groups.
6. The teacher's perceptions of the student as a decision-maker in curricular matters affects the degree to which the student's goals are utilized as a determinant of instructional content.
7. The teacher's perception of motivation as being enhanced by content relevant to the learner's goals and experiences increases both the degree to which curriculum is adjusted to the learner's abilities, goals and experiences and the degree to which content is allocated to individuals and small groups.

D. *Hypotheses concerning the relationship between source, allocation, and pace of instructional content and immediate learning outcomes*

1. When curriculum is selected and sequenced on the basis of societal needs/expectations, subject matter structure and pacing is predetermined, and content is allocated to large groups, then the student learns that
   a. There are structured relationships within content areas.
   b. The content may not be mastered by any individual or aggregate of individuals.
   c. It's okay not to master the content.
   d. Knowing about a lot of things is better than knowing well a few things.

e. "If I can't learn the content in the time allowed, I must be dumber than the rest of the group."
f. Learning isn't important; keeping up with the group and paying attention is more important than learning.

2. When instruction is selected and sequenced on the basis of societal needs and/or subject matter structure and allocated to large groups but paced in relationship to the time required for mastery by learners, then the student learns
   a. That only the experts know what is important to learn.
   b. To master content even though it may seem irrelevant or not meaningful to the learner.
3. When instruction is selected, allocated, and paced on the basis of both the structure of the discipline and the learner's goals and experiences, then the student learns that
   a. Experts are a source of knowledge about things I want to know.
   b. My experiences are a legitimate source of learning content.
   c. Disciplined knowledge can help me understand my experiencing, and vice versa.
   d. Disciplined knowledge can help me direct my experiencing.
   e. I can set goals and achieve them.
4. When instruction is selected and sequenced solely on the basis of the learner's goals and experiences, allocated to individual or small groups, and paced according to the time required for mastery by the learner, then
   a. Learned content may be seen as relevant but not within an ordered framework capable of coherent explanation and prediction.
   b. The student learns that learning relevant content *well* is more important than knowing *about* many things.
   c. The student learns that "I'd better help others reach their goals so we can move on!"

E. *Hypotheses concerning the relationships between instructional content and immediate learning outcomes leading to educational goals*

1. When students learn that their experiences are a legitimate source of content and that disciplined knowledge can be applied to help understand their experiencing, there is an increase in the degree to which the learner
   a. Distinguishes among many concepts of self in various roles or social situations.
   b. Is able to assess his or her functioning in each of several different situations.

c. Is able to perceive accurately, to assess validly and to respond appropriately to others' evaluations in the context of each specific situation rather than to generalize to all situations.
d. Believes that human behavior is influenced by many factors and and is best understood in terms of the relevant personal content in which it occurred.
e. Applies basic principles and concepts of the sciences, arts, and humanities to interpret personal experiences.

2. To the extent that students learn that disciplined knowledge can help them direct their experiencing, they will also
   a. Value learning experiences.
   b. Know that it is necessary to continue to learn throughout life because of the inevitability of change.
   c. Participate in satisfying leisure-time activities.
3. To the extent that the student learns that "I can set goals and achieve them," he or she will also
   a. Act on the belief that each individual has value as a human being and should be respected as a worthwhile person in his or her own right.
   b. Be a self-reliant learner who is capable of autonomous learning.
   c. Perceive self positively with a generally competent sense of well-being.
   d. Assume responsibility for personal actions.
   e. Be willing to work now for goals to be realized in the future.
4. When students learn that their experiencing is a legitimate source of content, that disciplined knowledge can be applied to help them understand and direct their experiencing, and that they can set and achieve goals, they will also be more likely to
   a. Behave rationally based upon reasonable perceptions of self and society.
   b. Maintain personal integration while functioning flexibly in varied situations.
   c. Entertain and value the imaginative alternatives of others.

Patterns of Reinforcement, Encouragement, and Support in the Teaching-Learning Process

A teacher's desire to encourage students, particularly disadvantaged ones, and support their efforts in the teaching-learning process sometimes complicates the teacher's reinforcement behavior in the teaching-learning situation. There are several combinations of teacher support, encouragement, and reinforcement of a student's accurate or inaccurate response. Some of the likely combinations include:

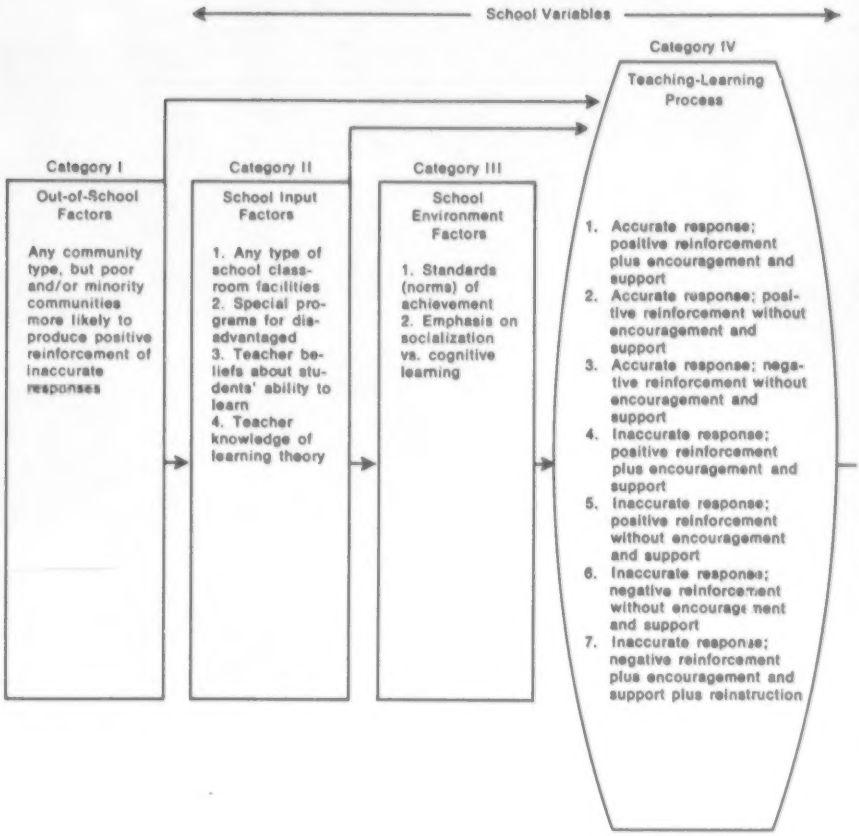
1. Student gives an accurate response; teacher gives positive reinforcement of the response and provides encouragement and support.
2. Student gives accurate response; teacher gives positive reinforcement of response but withholds encouragement and support.
3. Student gives accurate response; teacher gives negative reinforcement of response and withholds encouragement and support.
4. Student gives inaccurate response; teacher gives positive reinforcement of response and provides encouragement and support.
5. Student gives inaccurate response; teacher gives positive reinforcement of response and withholds encouragement and support.
6. Student gives inaccurate response; teacher gives negative reinforcement of response and withholds encouragement and support.
7. Student gives inaccurate response; teacher gives negative reinforcement and provides encouragement and support including reinstruction.

The hypotheses that follow suggest a series of relationships between the patterns of reinforcement, encouragement and support, and out-of-school variables, school input variables, school environmental factors, and immediate learning outcomes and educational goals. All of these hypotheses are derived from the underlying notion that reinforcement is essential in the teaching-learning process, but those affective behaviors (such as encouragement and support) associated with the reinforcement may modify or confuse the learner's response.

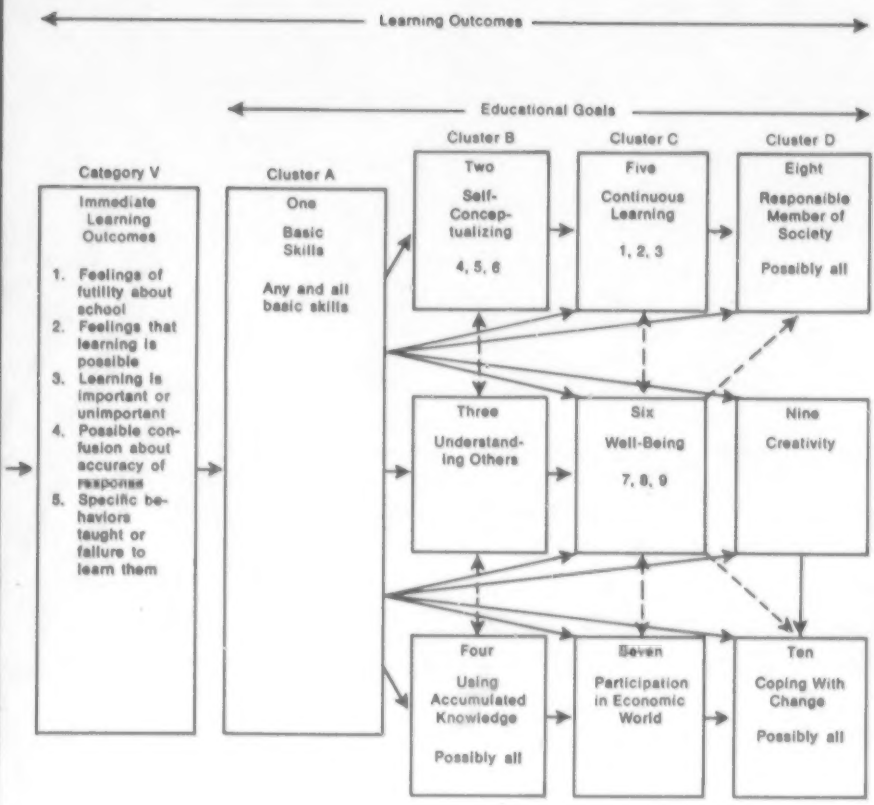
A. *Hypotheses concerning the impact of out-of-school factors on patterns of reinforcement and encouragement in the teaching-learning process*
   1. Any pattern of reinforcement and encouragement may occur in any community type.
   2. Positive reinforcement for inaccurate responses is more likely to occur in schools located in poor and minority communities.
   3. Encouragement and supportive teacher behavior associated with inaccurate responses is more likely to occur in poor and minority communities.

B. *Hypotheses concerning the impact of school input factors on patterns of reinforcement and encouragement in the teaching-learning process*
   1. Types of classroom and school facilities are unrelated to patterns of reinforcement and encouragement processes.
   2. Students in special programs for disadvantaged, such as compensatory and bilingual education, are more likely to receive positive reinforcement for inaccurate responses than students not in such programs.

Figure 10. Patterns of Reinforcement, Encouragement, and Support


School Variables
Category I
Out-of-School Factors
Any community type, but poor and/or minority communities more likely to produce positive reinforcement of inaccurate responses
Category II
School Input Factors
1. Any type of school classroom facilities
2. Special programs for disadvantaged
3. Teacher beliefs about students' ability to learn
4. Teacher knowledge of learning theory
Category III
School Environment Factors
1. Standards (norms) of achievement
2. Emphasis on socialization vs. cognitive learning
Category IV
Teaching-Learning Process
1. Accurate response; positive reinforcement plus encouragement and support
2. Accurate response; positive reinforcement without encouragement and support
3. Accurate response; negative reinforcement without encouragement and support
4. Inaccurate response; positive reinforcement plus encouragement and support
5. Inaccurate response; positive reinforcement without encouragement and support
6. Inaccurate response; negative reinforcement without encouragement and support
7. Inaccurate response; negative reinforcement plus encouragement and support plus reinstruction

EDUCATIONAL RESEARCH MODEL



3. Teachers who believe that some students cannot learn provide more positive reinforcement for incorrect student responses and associated supportive behavior than teachers who believe that all students can learn.
4. Teachers trained in reinforcement learning theory give positive reinforcement for incorrect student responses less often than teachers with little knowledge of reinforcement theory.

C. *Hypotheses concerning the impact of school environment factors on patterns of reinforcement and encouragement in the teaching-learning process*

1. Schools with high standards of achievement produce more of the following patterns of reinforcement and encouragement behavior than schools with low standards of achievement:
   a. positive reinforcement of correct student responses with personal support and encouragement.
   b. negative reinforcement of incorrect student responses with personal support, encouragement, and reinstruction to correct errors.
2. Schools that emphasize effective learning produce more of the following patterns of reinforcement and encouragement than schools emphasizing cognitive learning:
   a. providing encouragement and support for students with little emphasis on positive or negative reinforcement of cognitive responses.
   b. giving positive reinforcement and encouragement to students who respond even though their responses may be partially or totally inaccurate.

D. *Hypotheses concerning the relationships between patterns of reinforcement-encouragement and learning outcomes leading to educational goals*

1. Positive reinforcement of students' accurate responses with encouragement and support results in:
   a. mastery of intended behaviors.
   b. acquisition of knowledge of basic principles of science, arts, and humanities.
   c. feeling that learning is possible and valuable.
   d. ability to appropriately assess one's functioning in school social situations.
   e. ability to perceive accurately, assess validly, and respond appropriately to others' evaluations.

f. rational behavior based on reasonable perceptions of self and society.
g. positive perceptions of self and a sense of well-being.
h. increased tendency to seek interaction and to feel comfortable with others.

2. Positive reinforcement of accurate responses without encouragement and support results in:
   a. acquisition of intended behavior.
   b. negative self perception and low sense of well-being.
   c. inability to perceive accurately, assess validly, and respond appropriately to others' evaluations in school context.
3. Negative reinforcement of accurate student response without support and encouragement results in:
   a. feeling of futility in school situation.
   b. failure to learn correct behavior.
   c. inability to assess one's functioning in school situation.
   d. irrational behavior based on unreasonable perceptions of self.
   e. failure to value learning experience.
   f. tolerance of ambiguity.
   g. failure to learn basic principles and concepts of science, arts, and humanities.
   h. inability to perceive accurately, assess validly, and respond appropriately to others' evaluation in academic role.
   i. negative perceptions of self and low sense of well-being.
4. Positive reinforcement of inaccurate responses with encouragement and support results in:
   a. learning incorrect behavior in basic skills and other areas.
   b. positive self perceptions and sense of well-being.
   c. inaccurate assessment of one's functioning in school situations.
5. Positive reinforcement of inaccurate responses without encouragement and support results in:
   a. incorrect knowledge, skills, and other behavior.
   b. feelings of futility and hopelessness regarding school.
   c. confused self-assessment and inability to accurately assess one's self in school situation.
   d. inability to apply basic principles of sciences, arts, and humanities.
   e. minimized knowledge of career options.
6. Negative reinforcement of inaccurate response without encouragement and support results in:
   a. failure to learn correct behavior.

b. assessment of self as incompetent and unable to learn in school situations.
c. feelings of futility in school situation.
d. devaluing learning experience.
e. failure to acquire knowledge of basic principles and concepts in sciences, arts, and humanities.

7. Negative reinforcement of accurate student response with encouragement and support including reinstruction results in:
a. feeling that learning is possible.
b. learning of correct behavior.
c. maintaining personal integration and acquiring reasonable perceptions of self.
d. accurately assessing one's functioning in school situation.
e. ability to perceive accurately, assess validly, and respond appropriately to others' evaluations.

Responding to Expressed Feelings in the Teaching-Learning Process

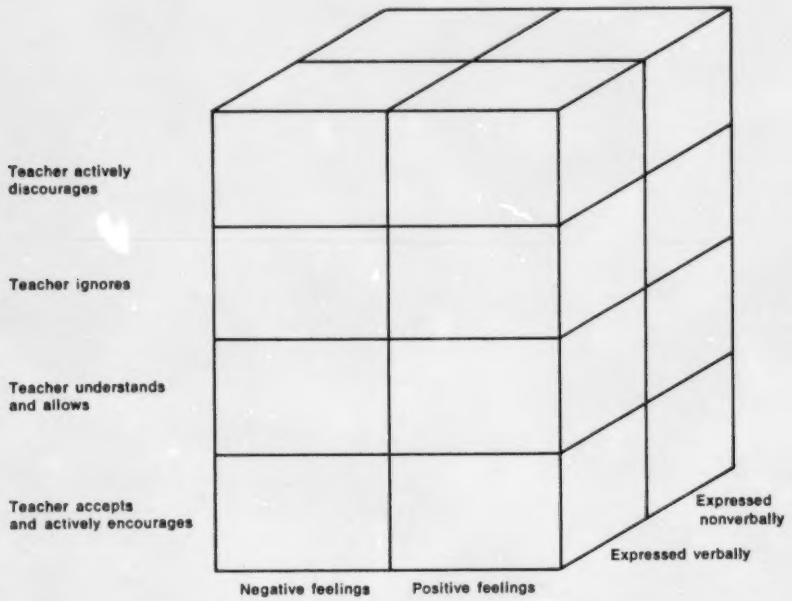
Within the classroom environment, feelings occur and are treated as either legitimate in the educational context or as inappropriate. The response to feelings in the instructional setting can range all the way from helping students learn processes for controlling/changing their internal states to actively discouraging even the recognition that feelings exist. There are several dimensions to be considered in response to feelings: (1) the kinds of feelings, if any, which are made legitimate for expression in the classroom; (2) who may express their feelings; (3) to which stimuli feelings may be expressed, for example, personal content versus school-related content; (4) whether feelings, or actions based on feelings, are evaluated, that is, it's okay to *feel* the way you feel but what you *do* about feelings may be right or wrong; (5) which ways of expressing feelings, are acceptable, for example, verbal versus nonverbal, creative expression in writing or art versus destructive behavior; and (6) instruction in ways of dealing with emotions.

Three dimensions were selected to define a teaching-learning process to be used for illustrative purposes: (a) the teacher's discouragement/acceptance of feelings, (b) the student's expression of feelings verbally or nonverbally, and (c) whether the feelings expressed are those typically classified by most people as unpleasant (sadness, fear, hatred) or pleasant (joy, compassion, caring). The teaching-learning process was stated as "The degree to which the teacher communicates understanding and acceptance of each student's feelings (accurate empathy)." Several points were

delineated along a continuum of acceptance and rejection of pleasant or unpleasant feelings which were expressed verbally or nonverbally.

The full spectrum of this continuum could be diagrammed as follows in Figure 11.

Figure 11. Dimensions of Response to Expressed Feelings



Several cells were sampled from the above figure and were then explicated in a research model. The cells sampled for use in the research model were as follows:

1. The teacher actively discourages student expression of . . .
   all feelings *or*
   negative feelings only *or*
   negative feelings when expressed verbally.
2. The teacher ignores student expression of . . .
   all feelings *or*
   negative feelings only *or*
   negative feelings only when expressed nonverbally.

3. The teacher understands and allows student expression of . . .
   positive feelings only when expressed nonverbally *or*
   all positive feelings *or*
   negative feelings expressed nonverbally *or*
   all negative feelings *or*
   all feelings, however expressed.
4. The teacher accepts and actively encourages student expressions of . . .
   positive feelings only when expressed verbally *or*
   all positive feelings *or*
   negative feelings expressed nonverbally *or*
   all negative feelings *or*
   all feelings, however expressed.

The model which was explicated is represented in Figure 12. Following are hypotheses drawn from the model.

A. *Hypotheses concerning the impact of out-of-school factors on responding to feelings in the teaching-learning process*
   1. The ethnic and social-economic make-up of the community in which the school is located influences central administration restraints, school philosophy, and norms of staff behavior in legitimizing response to feelings.
   2. Ethnic and SES make-up of the community influences the amount of training and experience in interpersonal skills that teachers have.

B. *Hypotheses concerning the impact of school input factors on responding to feelings in the teaching-learning process*
   1. School Environment Factors
      a. Central administration restraints and philosophy and the training and experience of teachers in interpersonal skills influence norms of staff behavior in legitimizing response to feelings.
      b. Class size, age, SES status, and ethnicity of students determine intra-class grouping practices and composition of classroom student body.
      c. Prior training and experience of teachers in interpersonal skills influences both the teachers' beliefs about the place of feelings in schools and the teachers' levels of interpersonal skills.
      d. Central administration restraints and philosophy for selection and training of administrators influence the principal's level of interpersonal skills.
   2. Teaching-Learning Processes
      a. Teachers who have had prior training and experience in the use of interpersonal skills are more likely to understand feelings that

are expressed in nonverbal ways and attempt to communicate understanding and acceptance of students' feelings, however expressed.

b. Smaller class size and freedom from time constraints increase the degree to which the teacher communicates understanding and acceptance of *each* student's feelings.

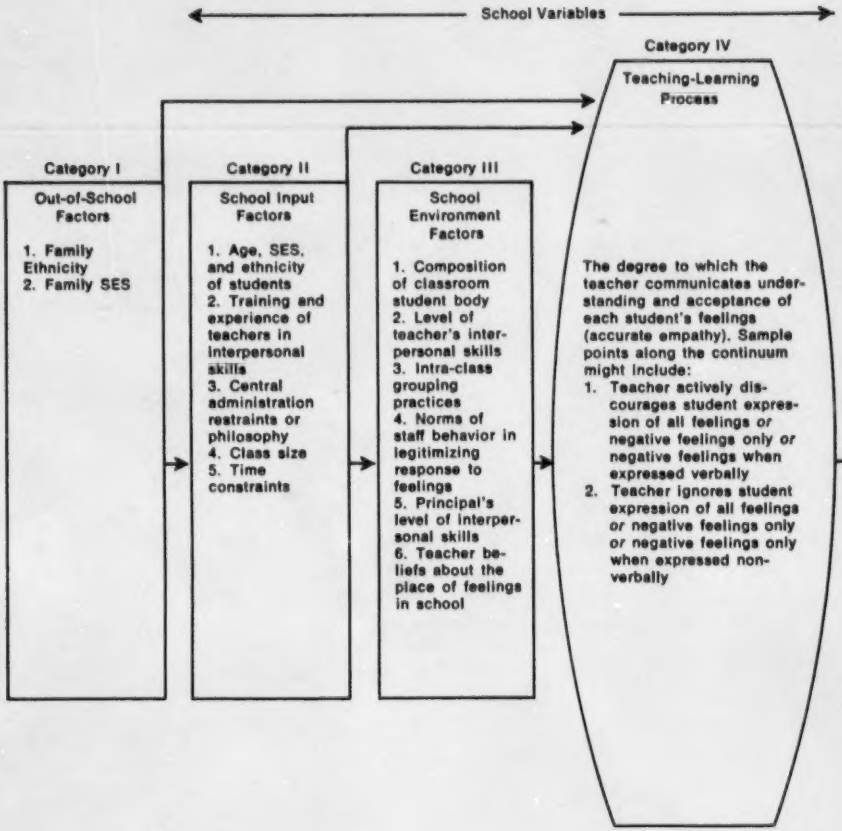
C. *Hypotheses concerning the impact of school environment factors on responding to feelings in the teaching-learning process*

1. The teacher's interpersonal skills and beliefs that feelings have a proper place within the instructional setting affect the teacher's attempts to communicate understanding and acceptance of students' feelings.
2. The higher the teacher's level of interpersonal skills and use of flexible and varied patterns of intra-class grouping, the more frequently understanding and acceptance of *each* student's feelings are communicated.
3. The higher the level of interpersonal skills utilized by the principal, the more likely the teacher is to communicate understanding and acceptance of each student's feelings.
4. When interpersonal skills training is held constant, and the more closely the composition of the classroom student body approximates teachers' own ethnic and SES backgrounds, the more likely they are to understand the feelings expressed and to accept both the modes for expression of those feelings and the feelings themselves.
5. The younger the age of the classroom student body, the less likely the teacher is to actively discourage the expression of feelings.

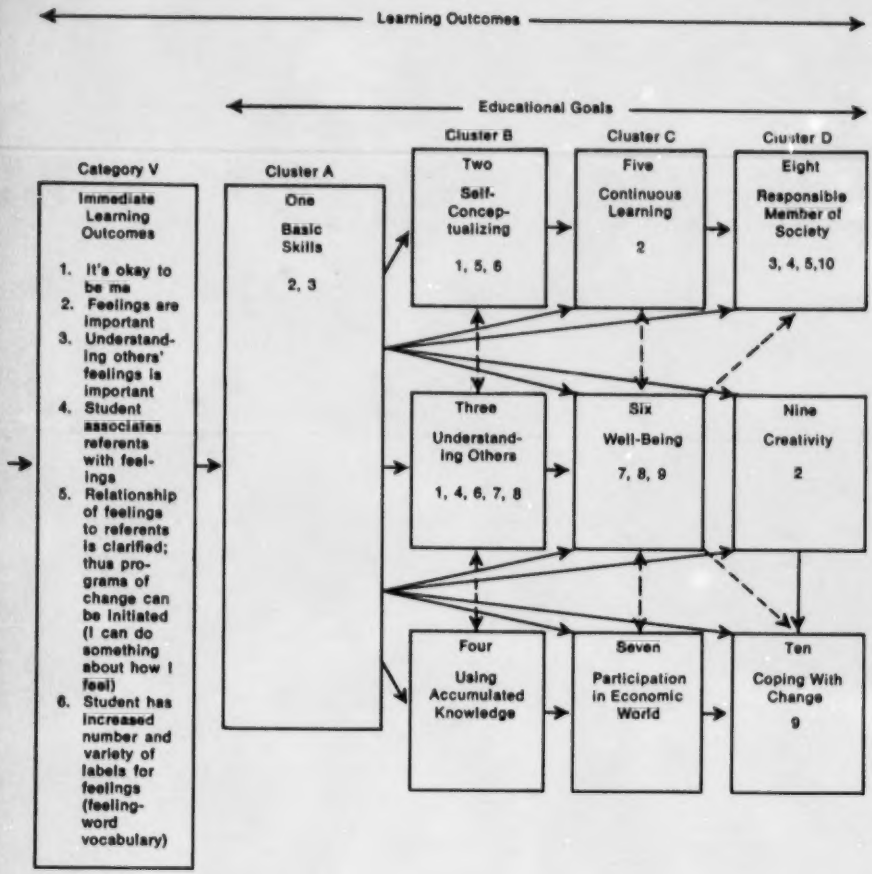
D. *Hypotheses concerning the relationship between responding to feelings and immediate learning outcomes*

1. The more frequently and accurately the teacher expresses acceptance and encouragement of each student's feelings, the more likely the student is to learn
   a. It's okay to be me.
   b. Feelings are important in learning.
   c. Understanding others' feelings is important.
   d. To associate referents with feelings.
   e. To clarify the relationship of feelings to referents.
   f. An increased number and variety of labels for feelings.
   g. To express feelings more accurately and more freely.
   h. To be more able to understand his or her emotional responses to stimuli.
   i. To have more control of own feelings.

Figure 12. Responding to Expressed Feelings

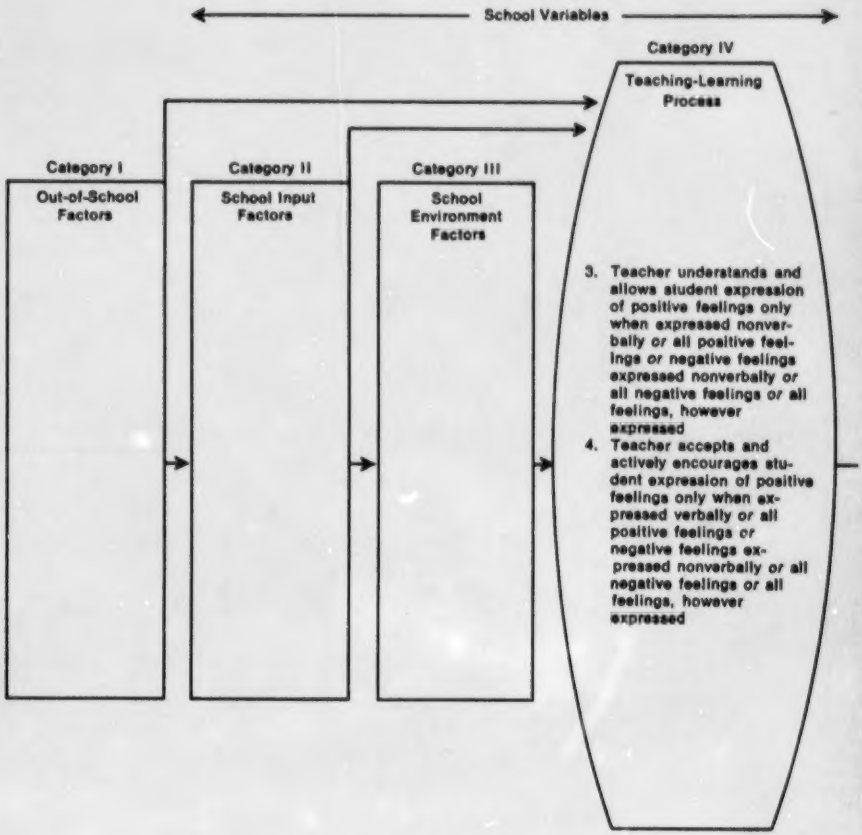

School Variables
Category I
Out-of-School Factors
1. Family Ethnicity
2. Family SES
Category II
School Input Factors
1. Age, SES, and ethnicity of students
2. Training and experience of teachers in interpersonal skills
3. Central administration restraints or philosophy
4. Class size
5. Time constraints
Category III
School Environment Factors
1. Composition of classroom student body
2. Level of teacher's interpersonal skills
3. Intra-class grouping practices
4. Norms of staff behavior in legitimizing response to feelings
5. Principal's level of interpersonal skills
6. Teacher beliefs about the place of feelings in school
Category IV
Teaching-Learning Process
The degree to which the teacher communicates understanding and acceptance of each student's feelings (accurate empathy). Sample points along the continuum might include:
1. Teacher actively discourages student expression of all feelings *or* negative feelings only *or* negative feelings when expressed verbally
2. Teacher ignores student expression of all feelings *or* negative feelings only *or* negative feelings only when expressed nonverbally

EDUCATIONAL RESEARCH MODEL

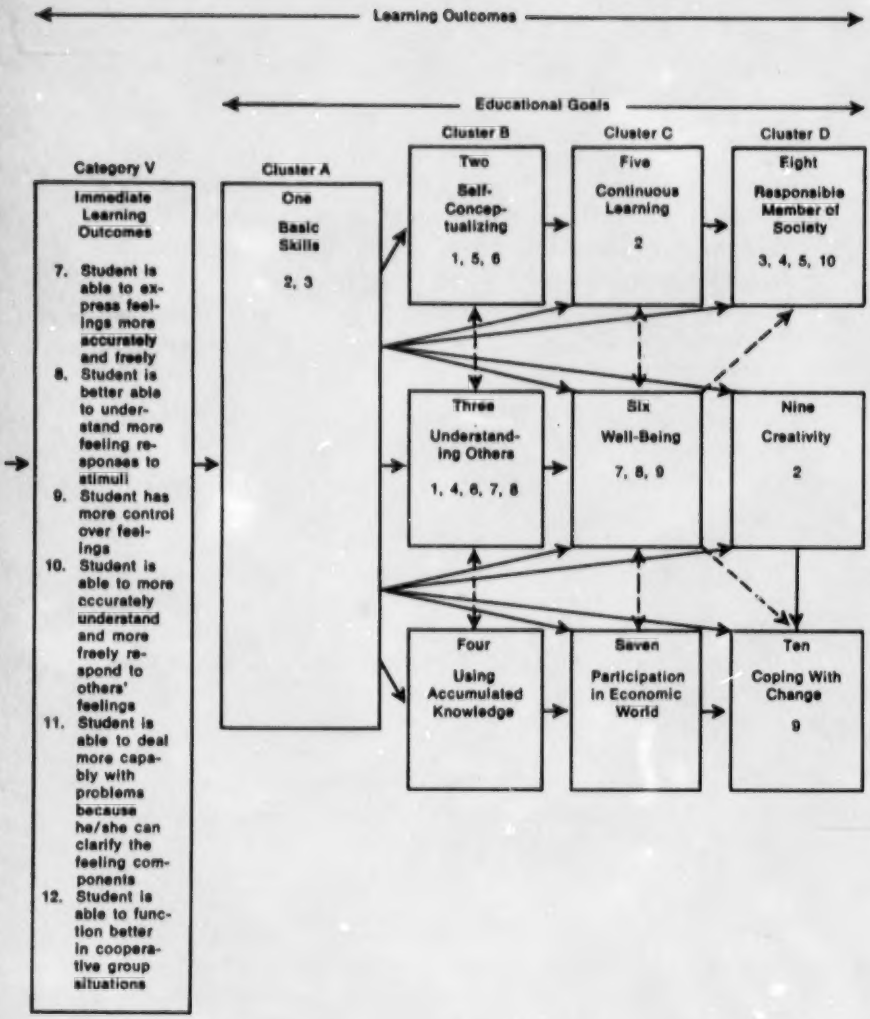


(continued)

Figure 12. Responding to Expressed Feelings (continued)


School Variables
Category I
Out-of-School Factors
Category II
School Input Factors
Category III
School Environment Factors
Category IV
Teaching-Learning Process
3. Teacher understands and allows student expression of positive feelings only when expressed nonverbally or all positive feelings or negative feelings expressed nonverbally or all negative feelings or all feelings, however expressed
4. Teacher accepts and actively encourages student expression of positive feelings only when expressed verbally or all positive feelings or negative feelings expressed nonverbally or all negative feelings or all feelings, however expressed

EDUCATIONAL RESEARCH MODEL



j. To more accurately understand and more freely respond to others' feelings.
k. To deal more capably with problems because of an increased ability to clarify the feeling components.
l. To function better in cooperative group situations.

2. The more frequently and emphatically the teacher actively discourages the expression of student feelings, the more likely the student is to learn
   a. It's *not* okay to be me.
   b. Who I am and how I feel is not worth spending time on in school, therefore I must not be a very worthwhile person.
   c. Understanding how other people feel is not important.
   d. Feelings do *not* play an important role in learning or problem-solving or decision-making.
   e. A much smaller feeling-word vocabulary, lessened ability to communicate own feelings, and poorer skills in understanding other people's feelings.

E. *Hypotheses concerning the relationships between responding to feelings and immediate learning outcomes leading to educational goals*

1. The better students are able to clarify the feeling components of problems, the more likely they are to process acquired information and meaning through skills of reflective thinking.
2. When students learn that "It's okay to be me," they tend to become more *self-reliant* learners who are capable of autonomous learning.
3. When students learn to associate referents with feelings, they begin to recognize that self-concept is developed in interaction with other people.
4. As the student is better able to understand more about his or her feeling responses to stimuli, he or she also becomes more able to assess own functioning in each of several different situations.
5. As students gain skill in accurately understanding and freely responding to others' feelings, they also learn
   a. That individuals differ (and are similar) in many ways, including feelings.
   b. To entertain and value the imaginative alternatives of others, because they understand others' feelings about their creations.
6. As students become able to function better in cooperative group situations, they also
   a. Are more able to perceive accurately, to assess validly, and to respond appropriately to others' evaluations in the context of

each specific role situation rather than to generalize to all situations.

b. Are more likely to act in accordance with a basic ethical framework incorporating those values contributing to group living, such as honesty, fairness, compassion, and integrity, because they understand the impact of those behaviors (or lack of them) upon others in the group.

c. Are more likely to work together in groups to achieve mutual goals.

7. As students increase the number and variety of labels for feelings, become able to express feelings more accurately and more freely, and can more accurately understand and respond to others' feelings, they also improve their abilities to express information and meaning through speaking, writing, and nonverbal means.

8. As students learn (1) it's okay to be me, (2) feelings are important, (3) when the relationship of feelings to referents are clarified, programs of change can be initiated, and (4) to be able to accurately understand and more freely respond to others' feelings, they also become more likely to

a. Act on the belief that each individual has value as a human being and should be respected as a worthwhile person in his or her own right.

b. Believe that human behavior is influenced by many factors and is best understood in terms of the relevant personal context in which it occurred.

c. Seek interactions and feel comfortable with others who are different in race, religion, social level or personal attributes as well as those who are similar in these characteristics.

d. Withhold judgment of another's action until after trying to understand the personal and social context of the action.

9. When students know that understanding others' feelings is important and can both accurately respond to others' feelings and function well in cooperative group situations, then they are also more likely to assume responsibility for dependent persons of all ages in a manner consistent with both their growth and development needs and the needs of society.

10. When students have learned to (a) associate and clarify feeling referents so that programs of change can be initiated, (b) better control and more freely express feelings, (c) accurately understand and respond to others' feelings, (d) deal more capably with problems through clarifying feeling components, and (e) function better

in cooperative group situations, then they are also more likely to

a. Maintain personal integration while functioning flexibly in varied situations.

b. Behave rationally based upon reasonable perceptions of self and society.

c. Perceive self positively with a generally competent sense of well being.

11. When the student has learned (a) that it's okay to be me, (b) to clarify the relationship of feeling to referents and initiate programs to change own feelings or referents, and (c) gain more control over own feelings, he or she also will tend to assume responsibility for his or her own acts.

Chapter 5 Getting There

We began this booklet by considering the objectives of humanistic education. We subsequently addressed the following kinds of questions:

"On what sorts of destinations should schools set their sights?"

"How can they find out when they arrive?"

"What sorts of inquiries will disclose better ways of getting there?"

Now it may prove fruitful to extend our travel metaphor in order to make some concluding remarks. Let us consider for whom and for what use this book is intended, and the possible dangers that are inherent in its misuse.

This booklet is not for disinterested visitors to a foreign land. It is for those concerned and acquainted with schools, for those knowledgeable of the topography and, particularly, the prominent features of the landscape. Such persons include those teachers and administrators in touch with the daily functioning of schools and those who are interested in systematically and deliberately trying to improve the chances of school children to attain educational goals. These knowledgeable and concerned school personnel, with input from the community, are in the best position to chart their school's course.

Therefore, rather than attempt to prescribe a single set of educational goals for all schools, the Committee on Research and Theory has provided these professionals with an extensive list that encompasses most of those goals educators consider important. We do not wish to prescribe each school's destination. That is a decision best left to the particular school and community. We do believe that we have provided a guide to the process of goal setting by listing and specifying a wide variety of educational goals.

Any particular school and community can use this list as a resource in setting priorities and choosing from alternatives. The list (in order of priority) developed by each school and community will reflect that community's view of the educated person and the rationale behind that community's support of the schools. In a sense, every educational journey has a different purpose with a correspondingly different itinerary. It would have been presumptuous of the Committee on Research and Theory to decide on one journey for all schools.

But exhortations about the importance of setting goals (and even about measuring goal attainment) are not new in educational literature. The gap that has existed is the provision for a *wide variety* of educational goals both in terms of *clear formation* and of *instrumentation for their measurement*. By providing a state-of-the-art assessment of measurement for a wide range of educational goals and suggestions for additional research and development in instrumentation, we are offering not a map of the territory but a guide to map making.

This booklet is, then, intended as a guide for map makers, whose maps of the "terrain" of the educational enterprise help both student-travelers and their teacher-guides in arriving successfully at their destination. Up to now the only maps available have been over limited terrain. As a consequence, teachers and administrators, not wanting students to get lost along the way, have typically stuck to the same itinerary, the widely known and well-worn path of exclusively cognitive skills. Although some travelers will always find this well-traveled route difficult, at least their guides can tell when they arrive and even provide a whole repertoire of techniques for getting them there. To suggest they start out for new destinations, regardless of the desirability of those unvisited places, has been to suggest a journey to the dark side of the moon—no signposts, no map, and no going back.

We recognize that a map, much less a guide to map making, does not constitute a panacea to the problems of educational travel. Much can happen along the way. But the use of our guide to map making, particularly our approach to systematic research on educational inputs, processes, and outputs, will result in direct benefits. The "model" we have provided should help school personnel avoid the "band wagon" approach to innovation of the 1970's. In that approach, educators grabbed at new programs without taking into account the impact any innovation would have on the total school, or if, in fact, the innovation would contribute to goal attainment at all. Particularly in times of severely limited funding available to support schools, we must attempt to utilize our resources wisely. As we plan our educational journeys, we want to provide for the most efficient means of transportation. The days of the gas guzzler are over. Our resources are too precious to waste.

But there is a constant danger inherent in the planning of educational itineraries and the means of transportation; there is much more to a journey than arriving at the destination on time and unharmed. People also embark on journeys for the experience of traveling. A trip through France is not undertaken just to arrive in Paris. The French countryside, the French people, the French wine and food, and the enjoyment of a traveling companion are all as important for the "success" of the journey as the arrival

in Paris. Nor should a kindergartener embark on an educational journey merely to receive a high school diploma or to learn only the three R's. Thus, there are compelling reasons for expecting the educational process not only to help children become "well educated," but also to meet a set of criteria relating to the intrinsic, rather than instrumental, aspects of the process. The educational process should not only accomplish goals but also be humane, rational, engaging, enjoyable, and personally gratifying, to mention just a few such criteria. The most compelling reason for this requirement is not that such humane education is most efficient or effective (it may not be), but, instead, that schooling comprises a substantial portion of people's lives and life should be lived in such a humane manner.

One final caveat in using this guide must be mentioned. In all our planning, research, and evaluation it is easy to forget that educational journeys are for the student-traveler, not for their teacher-guides, not for the map-making researchers, nor for the travel-agent administration. The educational travel industry is simply intended to help the student-traveler along on an educational journey; as much as we want to, we cannot make the journey for the student. We can only act as guides. It is in this spirit that this booklet is intended to be used.

References

Brookover, Wilbur B.; Beady, Charles; Flood, Patricia; Schweitzer, John; and Wisenbaker, Joe. *School Social Systems and Student Achievement: Schools Can Make a Difference*. New York: J. R. Bergin/Praeger, 1979.

Buros, O. K., ed. *Fifth Mental Measurements Yearbook*. Highland Park, New Jersey: Gryphon Press, 1965.

———. *Sixth Mental Measurements Yearbook*. Highland Park, New Jersey: Gryphon Press, 1965.

———. *Seventh Mental Measurements Yearbook*. Highland Park, New Jersey: Gryphon Press, 1965.

Coleman, James S.; Campbell, Ernest Q.; Hobson, Carol J.; McPartland, James; Mood, Alexander M.; Weinfeld, Frederick P.; and York, Robert L. *Equality of Educational Opportunity*. Washington, D.C.: U.S. Government Printing Office, 1966.

Educatonal Testing Service. *Tests in Microfiche, Sets A, B, C, D*. Princeton, New Jersey: Educational Testing Service, 1975, 1976, 1977, 1978.

Hauser, Robert; Sewell, William; and Alwin, Duane. "High School Effects of Education." In *Schooling and Academic Achievement in American Society*. Edited by W. Sewell, R. Hauser, and D. Featherman. New York: Academic Press, 1976.

Hyman, H. H.; Wright, C. R.; and Reed, J. S. *The Enduring Effects of Education*. Chicago: The University of Chicago Press, 1975.

Jencks, Christopher; Smith, Marshall; Acland, Henry; Bane, Mary Jo; Cohen, David; Gintis, Herbert; Heyns, Barbara; and Michelson, Stephen. *Inequality: A Reassessment of the Effect of Family and Schooling in America*. New York: Basic Books, 1972.

Jencks, Christopher; Bartlett, Susan; Corcoran, Mary; Crouse, James; Eaglesfield, David; Jackson, Gregory; Mclelland, Kent; Mueser, Peter; Olneck, Michael; Schwartz, Joseph; Ward, Sherry; and Williams, Jill. *Who Gets Ahead? The Determinants of Economic Success in America*. New York: Basic Books, 1979.

Johnson, Mauritz. "Definitions and Models in Curriculum Theory." *Educational Theory*, 1967.

———. *Intentionality in Education*. Albany, New York: Center for Curriculum Research and Services, 1977.

Johnson, O. A., and Bommarito, J. W. *Tests and Measurements in Child Development: A Handbook*. San Francisco: Josey-Bass, 1971.

Lake, Dale G.; Miles, Matthew B.; and Earle, Ralph B., Jr. *Measuring Human Behavior. Tools for the Assessment of Social Functioning*. New York: New York Teachers College Press, 1973.

Pennsylvania Department of Education. *Educational Quality Assessments*. Harrisburg, Pennsylvania: Pennsylvania Department of Education, 1976.

Simon, Anita, and Boyer, E. G., eds, *Mirrors for Behavior, III: An Anthology and Observation Instruments*. Wyncote, Pennsylvania: Communication Materials Center, 1974.

Zais, Robert. *Curriculum: Principles and Foundation*. New York: Harper and Row, 1976.

About the Authors

WILBUR B. BROOKOVER, Professor of Urban and Metropolitan Studies, Michigan State University, East Lansing, Michigan

JOSEPH FERDERBAR, Superintendent of the Neshaminy School District, Langhorne, Pennsylvania

GENEVA GAY, Associate Professor of Education, Purdue University, West Lafayette, Indiana

MILDRED MIDDLETON, Curriculum Coordinator, Cedar Rapids Community Schools, Cedar Rapids, Iowa

GEORGE POSNER, Associate Professor of Education, Cornell University, Ithaca, New York

FLORA ROEBUCK, Assistant Professor of Education Applied in Medicine, The Johns Hopkins University, Baltimore, Maryland

ASCD Publications, Spring 1981

Yearbooks

A New Look at Progressive Education (610-17812) $8.00
Considered Action for Curriculum Improvement (610-80186) $9.75
Education for an Open Society (610-74012) $8.00
Evaluation as Feedback and Guide (610-17700) $6.50
Feeling, Valuing, and the Art of Growing: Insights into the Affective (610-77104) $9.75
Life Skills in School and Society (610-17786) $5.50
Lifelong Learning—A Human Agenda (610-79160) $9.75
Perceiving, Behaving, Becoming: A New Focus for Education (610-17278) $5.00
Schools in Search of Meaning (610-75044) $8.50
Staff Development/Organization Development (610-81232) $9.75
Perspectives on Curriculum Development 1776-1976 (610-76078) $9.50

Books and Booklets

About Learning Materials (611-78134) $4.50
Action Learning: Student Community Service Projects (611-74018) $2.50
Adventuring, Mastering, Associating: New Strategies for Teaching Children (611-76080) $5.00
Approaches to Individualized Education (611-80204) $4.75
Bilingual Education for Latinos (611-78142) $6.75
Classroom-Relevant Research in the Language Arts (611-78140) $7.50
Clinical Supervision—A State of the Art Review (611-80194) $3.75
Curricular Concerns in a Revolutionary Era (611-17852) $6.00
Curriculum Leaders: Improving Their Influence (611-76084) $4.00
Curriculum Materials 1980 (611-80198) $3.00
Curriculum Theory (611-77112) $7.00
Degrading the Grading Myths: A Primer of Alternatives to Grades and Marks (611-76082) $6.00
Educating English-Speaking Hispanics (611-80202) $6.50
Elementary School Mathematics: A Guide to Current Research (611-75056) $5.00
Eliminating Ethnic Bias in Instructional Materials: Comment and Bibliography (611-74020) $3.25
Global Studies: Problems and Promises for Elementary Teachers (611-76086) $4.50
Handbook of Basic Citizenship Competencies (611-80196) $4.75
Humanistic Education: Objectives and Assessment (611-78136) $4.75
Learning More About Learning (611-17310) $2.00
Measuring and Attaining the Goals of Education (611-80210) $6.50
Middle School in the Making (611-74024) $5.00
The Middle School We Need (611-75060) $2.50
Moving Toward Self-Directed Learning (611-79166) $4.75
Multicultural Education: Commitments, Issues, and Applications (611-77108) $7.00
Needs Assessment: A Focus for Curriculum Development (611-75048) $4.00
Observational Methods in the Classroom (611-17948) $3.50
Open Education: Critique and Assessment (611-75054) $4.75
Partners: Parents and Schools (611-79168) $4.75
Professional Supervision for Professional Teachers (611-75046) $4.50
Reschooling Society: A Conceptual Model (611-17950) $2.00
The School of the Future—NOW (611-17920) $3.75
Schools Become Accountable: A PACT Approach (611-74016) $3.50
The School's Role as Moral Authority (611-77110) $4.50
Selecting Learning Experiences: Linking Theory and Practice (611-78138) $4.75
Social Studies for the Evolving Individual (611-17952) $3.00
Staff Development: Staff Liberation (611-77106) $6.50
Supervision: Emerging Profession (611-17796) $5.00
Supervision in a New Key (611-17926) $2.50
Urban Education: The City as a Living Curriculum (611-80206) $6.50
What Are the Sources of the Curriculum? (611-17522) $1.50
Vitalizing the High School (611-74026) $3.50
Developmental Characteristics of Children and Youth (wall chart) (611-75058) $2.00

Discounts on quantity orders of same title to single address: 10-49 copies, 10%; 50 or more copies, 15%. Make checks or money orders payable to ASCD. Orders totaling $20.00 or less must be prepaid. Orders from institutions and businesses must be on official purchase order form. Shipping and handling charges will be added to billed purchase orders. *Please be sure to list the stock number of each publication, shown in parentheses.*

Subscription to *Educational Leadership*—$18.00 a year. ASCD Membership dues: Regular (subscription [$18] and yearbook)—$34.00 a year; Comprehensive (includes subscription [$18] and yearbook plus other books and booklets distributed during period of membership)—$44.00 a year.

Order from:

Association for Supervision and Curriculum Development
225 North Washington Street
Alexandria, Virginia 22314